



# **Flathead County Pre-hospital Emergency Medical Services Protocols**

Version 1.9

Effective: November 2017

These protocols are designed & authorized for Flathead County Responders only



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#### **Version 1.3 (5-2016)**

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## Montana Board Approved Protocols: Introduction

The Montana Board of Medical Examiners has approved the following protocols for licensed Montana Emergency Medical Responder's thru Paramedic's (including all endorsements).

These protocols are intended to be used as a default or baseline protocols for Montana licensed Emergency Medical Providers and local Medical Directors to assist in providing established and approved guidelines for individual providers functioning in pre-hospital, transport and emergent conditions.

The local medical director may choose not to use the default protocols and may develop protocols for their Emergency Medical Providers; **however**, service specific protocols must be first reviewed and approved by the Board of Medical Examiners.

The Board authorizes the medical director to use the Board approved protocols in their entirety or may determine to limit the service or individual Emergency Care Providers (ECP) function / practice where appropriate and in accordance with provider's abilities or needs of the community they serve. **However**, the local medical director may not significantly alter or expand approved Board protocols without first seeking Board of Medical Examiners approval. (See ARM 24.156.2140 for Board Protocol Request/Approval Procedures) A submission for approval form is available on <http://www.emt.mt.gov/>.

Emergency Medical Personnel may not function/practice beyond their individual licensure level and scope of practice authorized by the state wide protocols or local medical director (if an exception has been granted by the Board).

These protocols define the expected performance of various levels of pre-hospital personnel when faced with a variety of emergency situations. This is not a procedure manual describing the "how to", but a performance manual which guides the "what to do". It is presented in a field guide format for easy reference.

The **Advanced Cardiac Life Support (ACLS)** and **Pediatric Life Support (PALS)** algorithms for the various dysrhythmias are not reproduced in this protocol manual. They are available from various sources and it would serve no useful purpose to re-print them in this protocol. The algorithms are developed to guide a wide variety of medical providers.

It is the responsibility of the Montana Emergency Medical Provider to know / recognize their SCOPE OF PRACTICE and operate within their scope when utilizing ACLS/PALS algorithms. When the appropriate Emergency Medical Provider encounters a dysrhythmia, they are to treat the patient: within their scope of practice, according to the most recent pre-hospital ACLS or PALS protocols and as directed by their medical director. Medications/procedures identified in the algorithms that are outside of the National Educational Standards and Montana scope of practice of the individual licensee may not be performed.

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## **General Board Statements Concerning ECP (Emergency Care Providers) Scope of Practice**

The Montana Board of Medical Examiners has prepared the following statements to frequently asked questions concerning the ECP scope of practice. These statements while they do not carry the power of rule or regulation, it provides the reader an understanding of how the Board feels concerning a specific issue. It is hoped that these statements will help avoid confusion on difficult issues.

**EMERGENCY CARE PROVIDERS EMPLOYED IN OTHER THAN PRE-HOSPITAL SETTINGS:** The Montana Board of Medical Examiners has been asked whether an Emergency Medical Provider who is employed in an in-hospital setting may perform acts beyond the level of his or her ECP licensure under orders from the ECP's employer, without jeopardizing the ECP's licensure.

An ECP's practice is, by statute, limited to the out-of-hospital scene (Section 50-6-201, Montana Code Annotated). Some Montana hospitals, however, recognizing the skills and training of the certified ECP, have begun to employ ECPs in the hospital emergency room and other in-hospital settings. Typically, the facility lists ECP-licensure as a criterion for employment, and then trains the person in such additional skills and techniques as may be necessary to perform the in-hospital job, e.g., phlebotomy. The facility may call the employee an "emergency department technician" or "emergency room assistant." Such employment practices are cost-effective for the facilities because they can send the employee out to the scene of an accident on an emergency call as a fully-certified ECP, and, when the run is completed, can use the same employee for routine in-hospital tasks instead of having to employ an additional unlicensed person for those tasks.

The Board's jurisdiction in this matter extends to the licensure and conduct of Emergency Medical Provider when that person is acting in the capacity of an ECP. Hence, the various levels of ECP licensure (EMR, EMT, AEMT and Paramedic) reflect different levels of education and training required by administrative rules, which have been promulgated by the Board. When the ECP is providing pre-hospital care at the scene of an accident or medical call, the ECP must confine his or her practice to the tasks allowed under the ECP's level of licensure; in such a context, the Board has the obligation to protect the public by ensuring that the individual ECP has been trained according to the rules, has passed the examination required by rule, and otherwise meets the licensure requirements.

Licensure as an ECP, however, does not preclude the licensed person from pursuing other employment in the health care field, undertaking additional training, and exercising additional skills acquired from non-ECP sources, in a non-ECP context.



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When a hospital employs a person to perform non-ECP tasks, on-site in the hospital's facility, the hospital undertakes the responsibility to educate, train, and monitor the person's performance, rather than the Board. The ECP who performs such non-ECP tasks in a hospital setting may not use the title associated with pre-hospital licensure (EMR, EMT, AEMT or Paramedic). Under these circumstances, the ability and obligation to protect the public passes from the Board to the employing facility, at least until the ECP's next out-of-hospital run.

The Board recognizes that a geographical determination "Where was the ECP, on a run or in the hospital" may oversimplify the issues in a given case, and the Board will treat complaints and questions on a case-by-case basis when presented to the Board. However it is the Board's position that exercising skills or performing tasks beyond the scope of a person's ECP-licensure, when so required by the person's employer **in a non-ECP setting**, does not constitute a **per se** violation of ARM Rule 24.156.2701(i).

### **EMERGENCY CARE PROVIDERS (ECPs) CONTINUING PATIENT CARE ONCE IN A MEDICAL FACILITY:**

It is the position of the Montana Board of Medical Examiners that Emergency Care Providers who begin initial patient care as a part of their normal out-of-hospital response may continue the patient's care in the medical facility under the following provisions: (1) the care rendered in the facility is at the request of the medical provider and (2) the Emergency Medical Provider operates within their individual scope of practice at all times. The Montana Board of Medical Examiners believes that quality medical care is a team effort by many different providers all working for the best patient outcome. The Board also believes the Emergency Medical Provider's role in assisting the medical staff at a medical facility (when requested) contributes to that team effort until transfer of patient care is complete. Emergency Medical Provider's, like all of the other health care providers, bring a set of skills and knowledge to the team, thus increasing the patient's chance for a better outcome.

### **EMERGENCY CARE PROVIDERS (ECPs) ON AN EMS SERVICE RESPONDING TO A MEDICAL FACILITY AT THE REQUEST OF THE FACILITY:**

It is the position of the Montana Board of Medical Examiners that Emergency Care Providers on an EMS service responding to a medical facility may function within their scope of practice utilizing their usual standing orders, protocols and medical oversight and in preparation for transport. This does not change when the location requesting assistance is from a medical facility. The Montana Board of Medical Examiners believes that quality medical care is a team effort by many different providers all working for the best patient outcome. The Board also believes the ECP's role in assisting the medical staff at a medical facility (when requested)



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contributes to that team effort until transfer of patient care is complete. ECPs, like all of the other health care providers, bring a set of skills and knowledge to the team; thus increasing the patient's chance for a better outcome.

### **RECOMMENDATIONS MEDICATION CONTROL PROCEDURES FOR EMS SERVICES:**

All medications should be treated the same. While narcotics require the most extreme controls, if one procedure is developed for all medications, it's more likely to be followed by all staff and becomes less confusing for all.

All medications should be inventory controlled.

A "Medication Log" should be developed and maintained that identifies all medications utilized by the service by medication name, location, purchase date and expiration date.

All medications not assigned to a specific person, should have unauthorized access controlled by policy, location or other method.

All medications assigned to a specific person (or crew) should be done in writing and/or via a computerized drug dispensing system.

When medications are being transferred from person to person (or crew to crew) due to shift change, a written process should be developed that requires the receiving person (or crew) to accept the medications and the transferring person (or crew) to confirm medications transferred.

Only one or two persons should maintain oversight of purchasing and replacement of expired medications.

This should be documented on the "Medications Log" identified above. All medications disposed of should be witnessed by another and documented in writing.

Security should be maintained on all medications carried on EMS vehicles or in EMS medication bags constantly, either by locking devices or secure locations.

A quality assurance program must be developed and maintained to compare amounts of medications used during patient care (documented on patient care reports) and amounts replaced due to usage.

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All medications disposed of during the actual run (not returned to the person responsible for oversight) must be witnessed and documented either on a specific form or patient care report in which some of the medications were utilized.

All discrepancies in amounts, locations, documentation and security must be investigated by the medical director immediately.

### **ECP WILDERNESS EDUCATIONAL PROGRAMS:**

Emergency Care Providers who attend ECP Wilderness educational programs do so to expand their education and flexibility in applying patient care in non-conventional settings, while maintaining patient care standards as identified by the Board approved Montana ECP Statewide Protocols.

The altering of Board approved Montana ECP Statewide Protocols by individual ECPs is unsafe practice and may result in Board action against the licensee.

There is a Board process for the Medical Director to alter Board approved Montana Statewide ECP Protocols for specific services if necessary.

Individual ECPs must function within the Montana Statewide Pre-Hospital Treatment protocols.

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## GENERAL INSTRUCTIONS FOR USING THESE PROTOCOLS

To use these protocols as they are intended, it is necessary to know the underlying assumptions:

1. Users of these protocols are assumed to be a licensed provider in Montana and have knowledge of basic and more detailed patient management principles found in the Educational Standards, EMS textbooks and literature appropriate to the EMS provider's level of licensure.
2. The protocols are NOT intended to be a sequential approach to patient care where everything must be done in the exact order as written. You are expected to practice medicine at the level of your licensure. The licensed provider should always evaluate the needs of the patient and consider the benefits vs. the risk when applying these recommendations. Each level of licensure is expected to appropriately integrate their skills into the total patient care (e.g. in the SHOCK protocol, the Advanced Emergency Medical Technician is to "establish an advanced airway as needed". While this is listed as the first item under AEMT, the AEMT should know it may well need to be incorporated into the INITIAL ASSESSMENT.)
3. Drug dosages contained within this protocol are to assume "**LEAN BODY WEIGHT**" when computing dosages/body weight and might need to be adjusted accordingly. In the pediatric patient use a "length-based resuscitation tape" to calculate medication dosages.
4. The term "**AS NECESSARY**", when used in the sections dealing with IV administration, means: (1) when the patient presents signs and symptoms of impending shock, (2) has potential to develop shock, (3) or for medication administration.
5. The term "**Start a peripheral IV(s)**" when dealing with patients means, after one peripheral attempt or if NO obvious site is present, establish an intraosseous (IO) site. In the conscious patient with an IO, cardiac Lidocaine 2% (adults: 20-40mg; pediatric: 0.5mg/kg) should be considered before infusing medication or fluid to reduce infusion pain if within your scope of practice.
6. The term "**CONSIDER**" utilized within this protocol means, an action, drug or treatment, that the ECP should apply critical thinking to determine, within their SCOPE OF PRACTICE, if that step should be initiated for the best patient outcome and with the optimal risk vs. benefit ratio.
7. Oxygen delivery should be to maintain an O2 saturation of > 92%. Use continuous pulse oximetry if within at your scope.

Obtaining and delivering or transmission of capnography numerical values (by basic life support personnel) to the receiving emergency room is not prohibited, provided that obtaining the numerical values do not delay assessment, management and transportation of the patient. Capnography interpretation and use for management or treatment purposes is not within the EMR/EMT/AEMT scope of practice.

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8. Obtaining and delivering or transmission of a 3 or 12 lead EKG (by basic life support personnel) to the receiving emergency room is not prohibited; provided that obtaining the EKG does not delay assessment, management and transportation of the patient. EKG interpretation and use for management or treatment purposes is not within the BLS scope of practice.

Obtaining and delivering or transmission of a 15 lead EKG by Paramedic personnel to the receiving emergency room is not prohibited

9. These protocols reflect a SCOPE OF PRACTICE and may be different than the SCOPE OF EDUCATION you were trained to. It is the responsibility of providers to know / recognize their SCOPE OF PRACTICE and operate within that scope.

10. It is the responsibility of the licensed provider to be competent in the skills identified in these protocols before attempting any procedure or protocol contained in this document. Medical Direction may be required to complete portions of these protocols; it is the responsibility of the provider to always function legally.

11. Each protocol has identified the licensure level or endorsement for specific treatment considerations. If a specific licensure level or endorsement is not listed, there is nothing specific for that level or endorsement. However, each level of licensure or endorsement assumes that everything prior to that level or endorsement has been considered or completed. As example if pain medications are identified at the AEMT with I99 endorsement level, it can be assumed that the PARAMEDIC includes pain medications as well as anything specifically listed under PARAMEDIC.

12. Drug Assisted Intubation (DAI), in any form or manner, or performing a surgical (using a scalpel) cricothyrotomy is not in the scope of practice for the PARAMEDIC.

13. Throughout this document there are sections with the notation: ***"per local protocol"***. These sections within the protocol allow for flexibility to address local needs but also require specific attention by the local medical director. This implies and requires the active participation of the local medical director to utilize that section of the protocol. That would include but not be limited to supplemental education, review of recommended dosages, indications for usage and QA/QI review.

14. ECP's may transfer patients between medical facilities provided that they possess the knowledge and skills necessary to manage the needs of the patient. Consultation with the transferring physician is required to assure the potential needs of the patient are met while conducting the transfer. The ECP's scope of practice may not be expanded to meet the needs of the patient; appropriate personnel must be obtained to assure continuity of patient care.

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## GENERAL ORDERS FOR ALL PATIENTS

- I. **Scene Size Up and Primary Assessment.** Done initially on every patient and repeated every 5-10 minutes.
  - A. Check responsiveness.
  - B. AIRWAY - Is it patent? Identify and correct existing or potential obstruction.
  - C. BREATHING - Present? Estimate rate, quality, and bilateral breath sounds. Consider oxygen administration; establish device/LPM by individual protocol. Identify and correct existing or potential compromising factors.
  - D. CIRCULATION - Pulse present? Estimate rate, quality, and location of pulse and capillary refill. Control external bleeding, identify and treat for shock.
  - E. DISABILITY - LOC, AVPU, Glasgow Coma Scale
  - F. If patient's condition dictates early transport; secondary assessment and additional treatment may be completed en-route to the hospital.
- II. **FOCUSED and or SECONDARY ASSESSMENT.** Complete as indicated by patient's condition. May include one or more of the following:
  - Determine level of consciousness.
  - Obtain AMPLE (allergies, medications, past medical history, last meal and event) history from the patient, family and/or bystanders.
  - Check for medical identification.
  - Perform a head to toe assessment.
  - Locate patient's medications and bring to hospital.
  - Obtain and record pulse, respirations, blood pressure, skin color and pupil reaction and size.
  - Obtain other pertinent information as determined by patient's condition (such as POLST or Comfort One documentation).
- III. **Additional Field Treatment and Preparation for Transport**
  - See appropriate protocol.
  - Any intravenous fluids or medications may be administered intraosseously
- IV. **Communications**
  - A. Radio information protocol, from Emergency Medical Responders (EMR) to responding ambulance:
    - Patient's age and sex
    - Chief complaint or problem
    - Vital signs and level of consciousness
    - Physical assessment findings
    - Pertinent history as needed to clarify problem (medications, illness, allergy, mechanism of injury)
    - Treatment given and patient's response

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B. Radio information protocol, from transporting personnel, to medical prior to arrival:

- Identify ambulance service
- Patient's age and sex
- Chief complaint or problem
- Vital signs and level of consciousness
- Physical assessment findings
- Pertinent history as needed to clarify problem (medications, illness, allergy, mechanism of injury).
- Treatment given and patient's response.
- ETA (Estimated time of arrival)
- Identify receiving hospital if different than the one communicating to
- Advise receiving facility of changes in patient's condition at any time

**A higher level of care, when available, should be requested as appropriate.**

**Patient transport should not be delayed awaiting arrival of the higher level of care.**

**Do not delay transport or treatment of the patient because of communication problems**

**Notify receiving hospital of any systems activation (trauma, STEMI or Stroke).**

**Provide a verbal report to, and leave a written report with the receiving facility.**

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## STANDARD / UNIVERSAL PRECAUTIONS

As explained in DOL Regulation 29 CFR 19.10, Standard/Universal Precautions is defined an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other blood borne pathogens.

Standard Precautions emphasize the major features of Universal (blood and body fluid) Precautions (designed to reduce the risk of transmission of blood borne pathogens) and Body Substance Isolation (designed to reduce the risk of transmission of pathogens from moist body substances). This means treating all blood and body fluids as potentially infectious. Standard precautions apply to (1) blood; (2) all body fluids, secretions, and excretions except sweat, regardless of whether or not they contain visible blood; (3) non-intact skin; and, (4) mucous membranes. Normally your skin acts as a protective barrier to keep viruses out, but even tiny breaks or cracks in the skin from common conditions like dermatitis, acne, chapping, or broken cuticles can become doorways for Human Immunodeficiency Virus (HIV) or Hepatitis B Virus (HBV) to enter your body.

Each worker is responsible to follow exposure follow-up recommendations.

### **SOURCES:**

Blood  
Wound Drainage  
Tissue  
Other Body Fluids  
Contaminated Materials  
POSSIBLE ENTRY SITES  
Eyes  
Nose  
Mouth  
Non-intact skin

### **PERSONAL PROTECTIVE EQUIPMENT:**

Protective equipment needs to be worn to prevent exposure to infection or hazards while working in a health care or while performing delivery of care to patients. Precautions are listed as: (1) Contact precautions; (2) Airborne precautions; (3) Droplet precautions; and (4) Standard Precautions. Precautions include wearing a mask (face shield), eye protection, gloves, gown, and placing patients in isolation when appropriate. Hand washing remains the primary method of reducing the spread of infection.

Routine and terminal cleaning of equipment that comes in contact with patients should be cleaned following policies and procedures at the agency in which the healthcare worker is working. The intended type of reprocessing equipment is determined by the article, it's intended use, the manufacturer's recommendations, policy and any applicable guidelines and regulations.



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## **CLEANING UP:**

Contaminated disposable (single use) patient-care equipment is handled and transported in a manner that reduces the risk of transmission. Environmental protection rules and regulations need to be followed for bagging and disposing of medical waste. Handling, storage, treatment, and disposal of all regulated waste shall be in accordance with Health and Safety Codes for the state and county in which the client company is located.

Any spilled body fluids or blood must be cleaned up following standard precautions, and use of protective equipment is required to prevent exposure. Cleaning up any spill requires that the area be disinfected using an acceptable solution for decontamination.

## **SHARPS & NEEDLE-LESS SYSTEMS:**

Sharps are to be handled with precaution. They are not to be recapped and are to be disposed of in proper rigid, puncture resistant, and leak proof containers.

Prohibited practices include, but are not limited to, the following:

- a) Reusing disposable sharps
- b) Shearing or breaking of contaminated needles and other contaminated sharps
- c) Opening, emptying, or cleaning sharps manually or in any other manner that would expose employees to the risk of sharps injury
- d) Any other improper handling of sharps/needle-less systems

It is now required that if both a needle-less and sharps device are available the needle-less systems must be used. The new regulation contains a new definition of sharps in general and requires that non-needle sharps be used that incorporate engineered sharps injury protection.

Sharps logs are to be maintained on all needle sticks for five (5) years from the date of the stick.

Training records are to be maintained for three (3) years post training.

## **YOUR PERSONAL CHECKLIST:**

- Personal Health- If you have an infection or feel ill, stay home.
- Keep health tests and immunizations up to date, as required for your job.
- Maintain good health. A strong body resists infection. Get enough rest, exercise, and maintain a healthy diet.

## **TRANSMITTABLE DISEASES: Basic Information**

**BLOODBORNE VIRUS EXPOSURE-** Universal Precautions- ALL blood exposures are considered potentially infectious, including undiagnosed exposures

## **HEPATITIS A & E:**

The viruses are excreted or shed in feces. Direct contact with an infected person's feces or indirect fecal contamination of food, water supply, raw shellfish, hands, and utensils may result in sufficient amounts of the virus entering the mouth to cause infections. Other transmission can occur due to intra-family or institutional transmission.

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### **HEPATITIS B:**

Formerly called serum hepatitis, it is the most common form of hepatitis with 30 million carriers in the world and an estimated 1.2 million carriers in the United States. Exposure is due to intrafamily or institutional transmission, anal or oral sex, or intravenous drug use.

### **HEPATITIS C:**

Formerly called non-A or non-B, more than 3.9 million Americans are carriers of the virus. Once exposed symptoms may not occur for up to 10 year. Exposure is directly one person to another via blood or contaminated needles, as from intravenous drug use, transfusion and hemodialysis. Exposure can occur due to unclean instruments used in tattoos, podiatry or nail care. Still under investigation is contamination from oral, household, and intra-family transmission.

### **HUMAN IMMUNODEFICIENCY VIRUS:**

Exposure: HIV is primarily transmitted through sexual contact but may also be transmitted through contact with blood and certain body fluids.

### **TUBERCULOSIS:**

Exposure occurs from individuals infected with *Mycobacterium tuberculosis*. It is an airborne, droplet nuclei transmission. Symptoms: May feel weak/sick, fever, experience night sweats, weight loss – cough (blood possible), chest pain.

Workers working with patients with known TB need to utilize personal respiratory protection, which is a high efficiency particulate air filtered (HEPA) mask that is fit based on OSHA standards.

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## ABDOMINAL PAIN (Medical Etiology)

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Be alert for and treat shock; see [Shock Protocol](#)

#### FOCUSED / DETAILED ASSESSMENT

Note nature of illness

Visualize and palpate abdomen

Obtain history

Obtain and record vital signs

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Place patient in position of comfort

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start a peripheral IV(s), as necessary, with NORMAL SALINE /LACTATED RINGERS solution (en route)

### **EMT** (Emergency Medical Technician) with medication endorsement:

Consider pain management; see [Pain Management Protocol](#)

### **AEMT** (Advanced Emergency Medical Technician):

Consider pain management; see [Pain Management Protocol](#)

### **AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Consider pain management; see [Pain Management Protocol](#)

### **PARAMEDIC:**

Consider pain management; see [Pain Management Protocol](#)

Consider antiemetic of choice for nausea or vomiting:

**Adult** - ZOFTRAN 4 mg IV, and may be repeated x1 up to 8 mg.

**Pediatric** - ZOFTRAN 0.1 mg/kg IV up to max 4 mg.

If QT prolongation is present or suspected, do not use ZOFTRAN. For adults consider PHENERGAN 12.5 to 25 mg IV/IM. Familiarize yourself with QT prolonging drugs. See [Drugs That Prolong QT](#)

#### **NOTE:**

Nothing by mouth

SAMPLE

Last menstrual period

Rectal bleeding

Important history

Bowel function

Consider pregnancy

Vomiting (nausea)

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## **ABNORMAL DELIVERY PROCEDURES**

### **BREECH BIRTH**

Breech-Buttocks First Presentation

Administer high flow oxygen per non-rebreather mask

Allow delivery to progress spontaneously

Support infant's body as it is delivered

If head delivers, proceed as in [Obstetrical Emergencies Protocol](#)

If head does not deliver within 2 minutes, insert gloved hand into vagina to take the pressure off the cord and if possible create a space around the infant's nose to allow breathing.

***TRANSPORT IMMEDIATELY, DO NOT REMOVE HAND UNTIL RELIEVED BY RECEIVING FACILITY STAFF***

Notify receiving facility as soon as possible of breech birth

### **LIMB PRESENTATION**

Place mother in Trendelenburg position

Administer high flow oxygen per non-rebreather mask

***TRANSPORT IMMEDIATELY***

### **PROLAPSED CORD**

Place mother in Trendelenburg position or knee-chest position

Administer high flow oxygen per non-rebreather mask

Insert gloved hand into vagina and push baby's head off of the cord

***TRANSPORT IMMEDIATELY, DO NOT REMOVE HAND UNTIL RELIEVED BY RECEIVING FACILITY STAFF***

Notify receiving facility as soon as possible of prolapsed cord

### **MULTIPLE BIRTHS**

While unusual, be alert to the possibility and stay with the patient.

#### **NOTES**

Consider the possibility of pregnancy in any female of child bearing age with complaints of vaginal bleeding, menstrual cycle irregularity, abdominal pain or low back pain or shoulder pain not associated with trauma.

If cord is around baby's neck during delivery, slip cord over baby's head to avoid strangulation or tearing of the cord. If cord is already tight, clamp cord twice and cut between clamps.

The greatest risks to the newborn infant are airway obstruction and hypothermia.

KEEP BABY WARM, COVERED AND DRY, INCLUDING THE HEAD; KEEP AIRWAY SUCTIONED with a bulb syringe (squeeze bulb before inserting into the mouth and do not touch the posterior pharynx)

Greatest risk to the mother is postpartum hemorrhage; watch closely for signs of hypovolemic

Shock with excessive vaginal bleeding

Anytime a mother in labor displays sudden onset of severe abdominal pain and/or shock, place mother on left or right side and treat for shock

Spontaneous or induced abortions may result in copious vaginal bleeding. Provide emotional support. Treat for shock as indicated. Bring fetus and any tissue to the receiving facility.

Follow NRP or PALS current guidelines for additional care as appropriate

[Return to Specific Protocols](#)

## **ADRENAL INSUFFICIENCY (Addison's Disease)**

**EMR** (Emergency Medical Responder):

**INITIAL ASSESSMENT**

Be alert for and treat shock; see [Shock Protocol](#)

**FOCUSED / DETAILED ASSESSMENT**

Obtain pertinent medical history

Check for Medical Alert tags

Note medications patient has taken, how much and when

**EMR** (Emergency Medical Responder) with monitoring endorsement:

Determine glucose

**EMT** (with medication endorsement):

For adult patients with adrenal insufficiency or at risk of acute adrenal crisis in medical distress, administer:

Hydrocortisone (Solu-Cortef) 100mg IM, OR

Methylprednisolone (Solu-medrol) 125mg IM, OR

Dexamethasone (Decadron) 4mg IM

For pediatrics with adrenal insufficiency, administer:

Hydrocortisone (Solu-Cortef) 2mg/kg IM (to maximum of 100mg), OR

Methylprednisolone (Solu-medrol) 2mg/kg IM (to maximum of 125mg), OR Decadron (dexamethasone) 0.03-0.15mg/kg IM (to

maximum of 4mg)

**AEMT** (with medication endorsement)

For adult patients (if not previously administered steroid dose), then administer:

Hydrocortisone (Solu-Cortef) 100mg IM/IV/IO, OR

Methylprednisolone (Solu-medrol) 125mg IM/IV/IO, OR

Decadron (dexamethasone) 4mg IM/IV/IO

For pediatrics (if not previously administered steroid dose), then administer:

Hydrocortisone (Solu-Cortef) 2mg/kg IM/IV/IO (to maximum of 100mg), OR methylprednisolone (Solu-medrol) 2mg/kg IM/IV/IO (to maximum of 125mg), OR Decadron (dexamethasone) 0.03-0.15mg/kg IM/IV/IO (to maximum of 4mg)

### **ADRENAL INSUFFICIENCY Continued**

Identification of the patient with adrenal insufficiency or acute adrenal crisis is critically important to outcome.

Hydrocortisone is the steroid of choice for adrenal insufficiency (AI), if available.

A stress dose of steroid should be given to patients with known AI in the presence of:

- shock (any cause)
- multisystem trauma, significant 2<sup>nd</sup>/3<sup>rd</sup>° burns or drowning
- multiple long bone fractures
- vomiting/diarrhea with dehydration
- acute cardiopulmonary distress
- fever >100.4° (and ill appearing)
- environmental hypothermia or hyperthermia

If no steroid is available during transport, then alert the emergency department/medical control that a patient with adrenal crisis is en route.

## ALTERED MENTAL STATUS

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

- Establish and protect airway
- Suction secretions as needed
- Administer high flow oxygen by non-rebreather mask
- Assist ventilations as needed
- Disability: LOC, AVPU, obtain [Glasgow Coma Scale](#) score
- Assess and treat for shock; see [Shock-Medical Protocol](#)

#### FOCUSED / DETAILED ASSESSMENT

- Identify mechanism of injury and/or etiology and treat as indicated; see specific protocols
- Consider oral GLUCOSE
- Obtain a history
- Neurological assessment on all four extremities

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

- It may be necessary to place patient in the coma position

### **EMR** (Emergency Medical Responder):

- Transport patient in coma position as injuries allow
- Use bag valve mask to assist ventilations as needed, 100% oxygen

### **EMR** (Emergency Medical Responder): with monitoring endorsement

- Determine blood glucose level
- Adult** - IF glucose level is < 60 and patient has control of their airway, consider Oral GLUCOSE

### **EMT** (Emergency Medical Responder): With NALOXONE Endorsement

- If Narcotic or Opiate overdose is suspected administer :

- Adult** – Naloxone for desired effect not to exceed 0.4 to 4mg (IN)  
(be aware that the patient may become belligerent or hostile and may need restraint)

- Pediatric – Naloxone 0.2mg/kg (IN), ½ dose each side.

### **EMT** (Emergency Medical Technician):

- Transport patient in coma position as injuries allow
- Use bag valve mask to assist ventilations as needed, 100% oxygen

### **EMT** (Emergency Medical Technician): with NALOXONE Endorsement

- If Narcotic or Opiate overdose is suspected administer:

- Adult** – Naloxone for desired effect not to exceed 0.4 to 4mg (IN)  
(be aware that the patient may become belligerent or hostile and may need restraint)

- Pediatric – Naloxone 0.2mg/kg (IN), ½ dose each side.

### **EMT** (Emergency Medical Technician) with airway endorsement:

- Consider advanced airway if needed



## Flathead County Pre-Hospital Protocols

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**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:  
Start a peripheral IV(s) as necessary, with NORMAL SALINE solution (en route)

**EMT** (Emergency Medical Technician) with medication endorsement:

If glucose < 60,

**Adult** - consider GLUCAGON 1mg (IM/IN/SQ)

If glucose > 60,

**Adult** – consider 0.4 mg NARCAN (IM/IN) for suspected narcotic overdose, if no response after 2 minutes, repeat dose once. For additional doses consult medical control

**AEMT** (Advanced Emergency Medical Technician):

Start a peripheral IV(s) as necessary, TKO with NORMAL SALINE

If glucose is 60-80 and patient is symptomatic:

Consider DEXTROSE 50% (25cc) IV. May repeat X1 for persistent hypoglycemia OR DEXTROSE 10% (100cc) IV; May repeat every 5 minutes to a max of 25g (250cc) for persistent hypoglycemia.

If glucose is <60 or unable to determine glucose then:

**Adult** - Consider THIAMINE 100 mg IV then administer:

DEXTROSE 50% (25cc) IV OR

DEXTROSE 10% (100cc) IV; May repeat every 5 minutes to a max of 25g (250cc) for persistent hypoglycemia.

Consider NARCAN 0.4-4 mg (IV/ET/IM/IN) (be aware that the patient may become belligerent or hostile and may need restraint)

**Pediatric** - Administer DEXTROSE 25% (2cc/kg (IV/IO) over 2 minutes, OR DEXTROSE 10%, 5cc/kg (IV/IO)

Consider Pediatric - NARCAN 0.1 mg/kg (IV/ET/IM/IO), max 2 mg OR (IN) 0.2 mg/kg, ½ dose each side

**Neonate** (<2 months) – administer DEXTROSE 10% 2cc.kg (IV)

If unable to initiate a peripheral IV and if glucose < 60, administer GLUCAGON

If < 20KG 0.5mg (IM/IN)

If >20Kg 1mg (IM/IN)

**DO NOT give DEXTROSE** if coma is secondary to trauma; unless GLUCOSE is < 60, then give small amounts of DEXTROSE 50% (50-100cc) and recheck GLUCOSE between doses, until in the normal range

If stroke is suspected, avoid affected limbs when establishing IV(s), if possible

## Flathead County Pre-Hospital Protocols

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### PARAMEDIC:

If Narcotic or Opiate overdose administer:

**Adult** - NALOXONE for desired effect not to exceed 0.4 to 4 mg (IV/ET/IM/IN/IO) (be aware that the patient may become belligerent or hostile and may need restraint)

**Pediatric** - NALOXONE 0.1 mg/kg (IV/ET/IM/IO), max 2 mg: or (IN) 0.2 mg/kg, ½ dose each side

\*Additional doses may be administered as needed after contact with medical control

### NOTE:

Maintain a high index of suspicion for neck injury in the unconscious patient with unknown etiology; See [Head/Neck/Spine Protocol](#)

Keep suction available at all times.

Prepare to handle respiratory and/or cardiac arrest.

Prepare to handle combative, disoriented patient.

Prepare to handle seizures; see [Seizure Protocol](#)

Remember, TALK to the patient hearing is the last sense to be lost in coma.

Transport all medications with patient.

Consider possible stroke

If diabetic emergency is a consideration and patient is unconscious,

DO NOT administer oral GLUCOSE.

While aphasic patients are unable to speak, they are usually acutely aware of their surroundings and very frightened, TALK to the patient, and keep the patient INFORMED

Extremes of BP, either high (over 200 mm Hg systolic) or low (under 100 mm Hg systolic) or with other clinical signs of shock indicate need to expedite transport.

Notify receiving facility of the patient's condition.

[Return to Specific Protocols](#)

# Flathead County Pre-Hospital Protocols

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## AMPUTATED PART

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Control external bleeding; see [External Bleeding Protocol](#)

Be alert for and treat shock; see [Shock Protocol](#)

#### FOCUSED / DETAILED ASSESSMENT

Identify mechanism of injury

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Apply appropriate dressing

Consider tourniquet for uncontrolled extremity hemorrhage

Care of amputated part: Rinse the part gently with normal saline to remove loose debris DO NOT SCRUB

Wrap amputated part in gauze moistened with saline

Place wrapped part into plastic bag and seal with tape (do not pour more fluid into bag)

Label with name, date and time

Place plastic bag into container filled with ice and water if available

Do not SUBMERGE

Do not use "dry ice"

Do not allow part to freeze!

Label with name, date and time

Arrange for transport of amputated part with patient

### **EMT** (Emergency Medical Technician):

While prompt transport and definitive care are important, care must be taken to assure total patient assessment and safety for all concerned during transport

Be sure amputated parts accompany ALL patients, including field deaths

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start IV as necessary, with NORMAL SALINE /LACTATED RINGERS solution (en route)

### **EMT** (Emergency Medical Technician) with medication endorsement:

Consider pain management; see [Pain Management Protocol](#)

### **AEMT** (Advanced Emergency Medical Technician):

Consider pain management; see [Pain Management Protocol](#)

### **AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Consider pain management; see [Pain Management Protocol](#)

### **PARAMEDIC:**

Consider pain management; see [Pain Management Protocol](#)

**NOTE:** Be aware that the obvious injury may not be the only injury

[Return to Specific Protocols](#)

## ANAPHYLAXIS

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Be alert for and treat shock; see [Shock Protocol](#)

Be alert for dyspnea; see [Dyspnea Protocol](#)

Administer patient prescribed EPINEPHRINE AUTO-INJECTOR

Administer patient prescribed ALBUTEROL INHALER

#### FOCUSED / DETAILED ASSESSMENT

Obtain pertinent medical history without delay of treatment

Known sensitivities and allergies

Onset of symptoms

Possible source of toxin

Check for Medical Alert tags

Medications patient has taken, how much, when and responses

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Activate EMS system at highest level of care available for rapid transport

### **EMT** (Emergency Medical Technician) with medication endorsement:

If BP > 70 systolic and no complaint of respiratory distress, or total body hives, or swelling of tongue, mouth or throat, consider administration of:

**Adult** – DIPHENHYDRAMINE 50-100 mg (PO)

**Pediatric** - DIPHENHYDRAMINE 0.5-1 mg/kg to a max of 50mg (PO)

**Adult** - If BP < 70 systolic or in respiratory distress, or total body hives, or swelling of tongue, mouth or throat that causes respiratory distress, consider administration of EPINEPHRINE (AUTO-INJECTOR) or 0.3 to 0.5 ml (1:1,000=1mg/ml) (IM) from a 1 ml vial of 1:1,000 epinephrine; repeat every 5 to 15 minutes as needed per local protocol

If repeated B/P is > 70, then administer:

**Adult** - DIPHENHYDRAMINE 50-100 mg (PO) or 50 mg IM

**Pediatric** - DIPHENHYDRAMINE 0.5-1 mg/kg to a max of 50mg (PO)

**Pediatric** – If BP < 70 systolic or in respiratory distress, or total body hives, or swelling of tongue, mouth or throat that causes respiratory distress, consider administration of pediatric EPINEPHRINE (AUTO-INJECTOR); repeat every 5 to 15 minutes as needed per local protocol.

For respiratory distress: ALBUTEROL 2.5mg mixed in 3cc of normal saline, NEBULIZED with oxygen after EPINEPHRINE

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start IV with NORMAL SALINE/LACTATED RINGERS solution (en route)

## ANAPHYLAXIS Continued

### **AEMT** (Advanced Emergency Medical Technician):

If BP is < 70 systolic or in respiratory distress, or total body hives, or swelling of tongue, mouth or throat that causes respiratory distress, administer:

**Adult**- EPINEPHRINE 0.3 to 0.5 ml (1:1,000=1mg/ml) (IM) repeat every 5 to 15 minutes as needed

**Pediatric** - EPINEPHRINE (1:1,000=1mg/ml) (IM) 0.01 ml/kg to a max of 0.5 mg; repeat every 5 to 15 minutes as needed.

### **AEMT** (Advanced Emergency Medical Technician) with medication endorsement:

If BP > 70 systolic and no complaint of respiratory distress, or total body hives, or swelling of tongue, mouth or throat, consider administration of:

**Adult** - DIPHENHYDRAMINE 50-100 mg (PO) ~~or 50 mg (IM)~~

**Pediatric** - DIPHENHYDRAMINE 0.5-1 mg/kg to a max of 50mg (PO/~~IM~~)

If BP < 70 systolic or in respiratory distress, or total body hives, or swelling of tongue, mouth or throat that causes respiratory distress, consider administration of EPINEPHRINE (AUTO-INJECTOR) or 0.3 to 0.5 ml (1:1,000=1mg/ml) (IM) from a 1 ml vial of 1:1,000 epinephrine; repeat every 5 to 15 minutes as needed per local protocol

If repeated B/P is > 70, then administer:

**Adult** - DIPHENHYDRAMINE 50-100 mg (PO) or DIPHENHYDRAMINE 50 mg (IM)

**Pediatric** - DIPHENHYDRAMINE 0.5-1 mg/kg to a max of 50mg (PO/IM)

If BP is < 70 systolic or in respiratory distress, or total body hives, or swelling of tongue, mouth or throat that causes respiratory distress, administer:

**Adult** - if unresponsive to IM EPINEPHRINE administration, then consider EPINEPHRINE (1:10,000=1mg/10ml) (IV) 2 to 4 ml, repeat every 3-5 minutes to a minimum B/P 90 systolic and improvement of symptoms

**Pediatric** - if unresponsive to IM EPINEPHRINE administration, then consider EPINEPHRINE (1:10,000=1mg/10ml) (IV) 0.1 ml/kg to a max of 4 ml (0.4 mg), repeat every 3 to 5 minutes to a minimum B/P 90 systolic and improvement of symptoms.

For respiratory distress: ALBUTEROL 2.5mg mixed in 3cc of normal saline, NEBULIZED with oxygen after EPINEPHRINE

## ANAPHYLAXIS Continued

### PARAMEDIC:

If repeated B/P is > 70, then administer:

**Adult** - DIPHENHYDRAMINE (BENADRYL) 50-100 mg (PO) or  
DIPHENHYDRAMINE (BENADRYL) 50 mg (IM/IV)

**Pediatric** - DIPHENHYDRAMINE (BENADRYL) 0.5-1 mg/kg to a max of  
50 mg (PO/IM/IV)

### NOTE:

Use Caution when administering epinephrine in older patients or patients with a history of cardiovascular disease

DO NOT delay transport for treatment

If an insect sting, scrape stinger out, do not pull stinger out

Presence of edema of tongue, mouth, and/or throat is an indicator for immediate transport

Anticipate acute airway obstruction and or respiratory arrest

DO NOT administer epinephrine 1:1,000 intravenously.

Benadryl IV should be administered slowly (50mg/min)

Use of single dose vial (1ml of 1:1,000 of epinephrine) for all levels is recommended to eliminate medication errors.

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## ARREST CARDIAC – ADULT

**EMR** (Emergency Medical Responder):

**INITIAL ASSESSMENT**

- Initiate CPR according to current CCC ([Continuous Chest Compression](#)) Standards
- Attach and utilize AED and follow protocol
- For hypothermic patients, see [Cold Emergencies - Systemic Hypothermia Protocol](#)
- Suction secretions as needed
- Administer high flow oxygen and assist ventilation as necessary

**FOCUSED / DETAILED ASSESSMENT**

- Obtain a history if possible

**ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT**

- Protect limbs from injury during movement

**EMT** (Emergency Medical Technician) with airway endorsement:

- Establish advanced airway as needed

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

- Start a peripheral IV with NORMAL SALINE /LACTATED RINGERS solution

**AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

- Attach monitor.
- Identify rhythm and treat specific dysrhythmia, within scope of practice, according to the most recent ACLS protocols as directed by the medical director

**PARAMEDIC:**

- Identify rhythm and treat specific dysrhythmia, within scope of practice, according to the most recent ACLS protocols
- Obtain, interpret and transmit 12 lead ECG if there is return of spontaneous circulation

Consider NaHCO<sub>3</sub> (SODIUM BICARBONATE) (1mEq/kg) for prolonged resuscitation.

Administer fibrinolytic (Not yet approved in Flathead County)

Administer ENOXAPARIN or HEPARIN (Not yet approved in Flathead County)

Consider Pre-Hospital Therapeutic Hypothermia upon ROSC: V-Fib arrest only

See Appendix - [Pre-Hospital Therapeutic Hypothermia](#)

See Appendix - [Resuscitation Triage](#)

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## **ARREST CARDIAC – PEDIATRIC**

**EMR** (Emergency Medical Responder):

### **INITIAL ASSESSMENT**

- Perform CPR according to current AHA standards
- Attach AED and follow protocol
- Suction secretions as needed.
- Administer high flow oxygen and assist ventilations as necessary

### **FOCUSED / DETAILED ASSESSMENT**

- Obtain a history if possible

### **ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT**

- Protect limbs from injury during movement

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

- Start a peripheral IV with NORMAL SALINE /LACTATED RINGERS solution
- Administer an initial fluid bolus of 20cc/kg; repeat one time and then contact medical Control

**EMT** (Emergency Medical Technician) with airway endorsement:

- Establish advanced airway as needed
- If unconscious and age >8, establish advanced airway as needed.

**AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

- Attach monitor
- Identify rhythm and treat specific dysrhythmia, within scope of practice, according to the most recent PALS protocols as directed by the medical director
- If unconscious and age >8, establish advanced airway as needed

**PARAMEDIC:**

- Attach monitor
- Identify rhythm and treat specific dysrhythmia, within scope of practice, according to the most recent PALS protocols as directed by the medical director

### **NOTE:**

- Consider foreign body obstruction.
- Airway and oxygen is the most important during a pediatric arrest since most arrests are secondary to primary respiratory compromise.
- Defibrillation is rarely indicated and a secondary consideration to airway.
- Do not delay transport to establish advanced airway at scene.**

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## BEHAVIORAL EMERGENCIES

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Protect yourself and others

#### FOCUSED / DETAILED ASSESSMENT.

Obtain history including:

Prescription or non-prescription drugs

Underlying organic cause, i.e. brain tumor, chemotherapy,  
hypoglycemia, hyperglycemia

Previous psychiatric problem

### **EMR** (Emergency Medical Responder) with monitoring endorsement:

Determine glucose

**Adult** - If glucose is < 60 and patient has control of their airway, consider oral GLUCOSE

### **EMT** (Emergency Medical Technician):

With patient consent:

Transport patient in position of comfort if not contraindicated by injuries

Keep environment as quiet as possible

Do not use sirens unless indicated by injuries

If patient refuses transport, contact law enforcement agency according to local requirements

Use and document physical restraint only as necessary for the protection of yourself or the patient

### **EMT** (Emergency Medical Technician) with medication endorsement:

If glucose < 60,

**Adult** - consider GLUCAGON 1mg (IM/IN)

### **PARAMEDIC:**

Agitation and/or Combativeness:

DIAZAPAM (VALIUM) 5mg IV, may repeat once OR

MIDAZOLAM (VERSED) 2 to 4 mg IV/IM may repeat once OR

LORAZEPAM (ATIVAN) 2 mg IV/IM may repeat once

DIPHENHYDRAMINE 50mg IV/IM OR

HALDOL 5 mg IV/IM, may repeat once with BENADRYL 50mg IV/IM

If patient exhibits extreme agitation and/or combativeness, consider Excited Delirium Syndrome (see best practice):

Administer KETAMINE 4 mg/kg IM (Maximum dose 400mg) or 1-2mg/kg IV (Maximum dose 100mg), then may follow with MIDAZOLAM 2 mg IV/IO slow push **OR** 2mg IN (1mg per nare).

If hypersalivation occurs, consider ATROPINE 0.5 mg IV/IM/IO  
**OR**

Administer MIDAZOLAM 2mg IV/IO slow push or 2mg IN (1mg per nare).

May repeat every 3-5 minutes as needed to a maximum of 10mg.

Contact medical control for further sedation orders if patient remains uncontrollably violent or agitated.

## Flathead County Pre-Hospital Protocols

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**Note:**

If KETAMINE utilized, it is important to notify the receiving facility and to clearly note this during transition of care, as patient's mental status and course will be affected by this medication.

Hyperthermia is a significant risk. Active cooling should be utilized as necessary.

**NOTE:**

RESCUER must assume control of the situation.

Multiple people attempting to intervene may increase patient's confusion and agitation.

Speak in a calm, quiet voice. Move slowly when approaching and caring for patient.

Do not attempt to restrain until law enforcement is on scene.

If restraints have been applied, do not remove. Protect airway.

Consider medical etiology (i.e.: hypoxia, hypoglycemia, etc.)

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## **BLEEDING CONTROL (EXTERNAL)**

**EMR** (Emergency Medical Responder):

### INITIAL ASSESSMENT

Control bleeding

Apply direct pressure over wound with your GLOVED hand (use dressing if immediately available)

After bleeding is controlled, apply a pressure dressing

Pressure dressing may include use of air splints or BP cuff partially inflated over the dressed wound without causing distal decrease in circulation

Consider tourniquet for uncontrolled extremity hemorrhage

See [Tourniquet Guidelines](#)

If pressure dressing becomes saturated with blood, remove dressing and repeat direct pressure until bleeding is controlled then re-apply a pressure dressing

Be alert for and treat shock; see [Shock Protocol](#)

Consider a clot inducing dressing or external clamping device for uncontrollable bleeding

Authorized clotting agents may be utilized on trauma patients that meet the current "Full Trauma Alert Criteria" as established by KRMCC-ER.

The Medical Director currently authorizes the clotting agent "Quick Clot" and their various product forms such as "fan fold gauze", "roll gauze" and "gauze squares".

### FOCUSED / DETAILED ASSESSMENT

Identify mechanism of injury

### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Monitor dressing and vital signs continuously

**EMT** (Emergency Medical Technician) with airway endorsement:

Establish advanced airway as needed

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start IV with NORMAL SALINE/LACTATED RINGERS solution (en route)

### **NOTE:**

Immobilize impaled objects in place

Consider removal of impaled objects in the cheek only if necessary to assure patient airway.

Be cautious for possible damage to gloves when applying direct pressure (bone ends, glass, etc.)

External clamping devices are currently approved for scalp, axillary, groin and extremity hemorrhage

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**NOTES**

## **BURNS – (Chemical/Thermal/Electrical)**

**EMR** (Emergency Medical Responder): ***ENSURE YOUR OWN SAFETY FIRST!***

### INITIAL ASSESSMENT

Be alert for and treat airway compromise

Be alert for and treat respiratory compromise or distress;

See [Dyspnea Protocol](#)

Be alert for and treat shock; see [Shock Protocol](#)

Be alert for and treat cardiac arrest; see [Cardiac Arrest Protocol](#)

Remove contaminant

Chemical on skin:

Remove contaminated clothing and flood skin with water for 20 minutes; wash gently with soap, water, and rinse

If contaminant is dry powder, brush off before washing

Identify contaminant. See [Poisoning Protocol](#)

Chemical in eye:

Flood eye(s) with lukewarm water continuously for at least 20 minutes and have patient blink frequently during irrigation

Identify contaminant

See [Poisoning Protocol](#)

### FOCUSED / DETAILED ASSESSMENT

Obtain and record pertinent history of events including:

Contaminant

Initial contact and length of exposure

Identify mechanism of injury

Identify all electrical contact points

Time of electrical contact

Obtain and record vital signs every 5-15 minutes depending on severity of burn

Obtain time of burn

Determine mechanism of injury and be alert for other trauma

### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Notify medical control of hazardous material situation

For large surface burns (i.e., torso, legs, etc.) place patient between clean dry sheets

Dress smaller burns with sterile dry dressing

**EMT** (Emergency Medical Technician) with airway endorsement:

Establish advanced airway as needed

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start IV with NORMAL SALINE/LACTATED RINGERS solution (en route).

Utilize a non-burned area if possible. For burns greater than 20% BSA

**Adult** - administer a 500cc - 1000cc bolus of fluid and contact medical control for rate adjustment

## BURNS Continued

**Pediatric** - administer a 20cc/kg fluid bolus and contact medical control for rate Adjustment

**EMT** (Emergency Medical Technician) with medication endorsement:  
Consider pain management; see [Pain Management Protocol](#)

**AEMT** (Advanced Emergency Medical Technician):  
Consider pain management; see [Pain Management Protocol](#)

**AEMT** (Advanced Emergency Medical Technician) with I99 endorsement:  
Attach monitor  
Consider pain management; see [Pain Management Protocol](#)

**PARAMEDIC:**  
Consider pain management; see [Pain Management Protocol](#)

### Parkland Burn Formula

$$\frac{\% \text{ Burn Area} \times \text{Patient Weight in kg}}{4} = \text{mL/hr}$$

[Rule of Nines](#)

#### **NOTE:**

Stop burning process.

Be alert for smoke inhalation (see [Poisoning Protocol](#)) or respiratory tract burns (see [Dyspnea Protocol](#))

Remove jewelry and non-adherent clothing from burned areas.

Keep patient warm

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# Flathead County Pre-Hospital Protocols

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## CHEST PAIN

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Administer supplemental oxygen

Be alert for and treat shock; see [Shock-Medical Protocol](#)

Be alert for irregular pulse rhythm

If systolic blood pressure is > 100, and no recent use of sexual enhancement drugs, then administer patient prescribed NITROGLYCERINE 0.4 mg (spray/SL), may repeat at 5 minute intervals if systolic BP remains > 100 mm Hg

#### FOCUSED / DETAILED ASSESSMENT

Obtain and record vital signs every 5 minutes

Obtain pertinent and AMPLE medical history including; onset, location, quality and duration of pain

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Place patient in position of comfort, loosen tight clothing and reassure

Expedite transport. Notify transporting agency as soon as possible

Consider ASPIRIN 325 mg, chew and swallow, if patient not allergic

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start IV TKO, with NORMAL SALINE/LACTATED RINGERS solution, (en route)

### **EMT** (Emergency Medical Technician) with medication endorsement:

Consider NITROGLYCERINE 0.4 mg (spray/SL), may repeat at 5 minute intervals if systolic BP remains > 100 mm Hg, for pain relief

### **AEMT** (Advanced Emergency Medical Technician):

Consider pain management; see [Pain Management Protocol](#)

### **AEMT** (Advanced Emergency Medical Technician) with I99 endorsement:

Attach monitor

Identify rhythm and treat specific dysrhythmia, within scope of practice, according to the most recent pre-hospital ACLS protocols as directed by the medical director

Consider pain management; see [Pain Management Protocol](#)

### **PARAMEDIC:**

Consider pain management; see [Pain Management Protocol](#)

Consider IV NITRO drip (No approved protocol currently in Flathead County)

If EKG shows STEMI, consider:

Fibrinolytic (No approved protocol currently in Flathead County)

Enoxaparin or Heparin (No approved protocol currently in Flathead County)

If EKG shows inferior STEMI, obtain right sided V4

Consider pain management, see [Pain Management Protocol](#)

Transmit EKG, if possible, to Kalispell Regional Hospital to [krmcmt@gmail.com](mailto:krmcmt@gmail.com), and notify Emergency Room staff of the transmission



### CHEST PAIN continued

**NOTE:**

Prepare to deal with respiratory or cardiac arrest.

Notify hospital.

Do not allow the patient to ambulate.

Nitroglycerin is the medication of choice for cardiac chest pain and should be utilized prior to considering narcotic analgesia.

FENTANYL and MORPHINE may be used when patient is complaining of chest pain unless patient is allergic to Morphine. Ketamine and benzodiazepines are not to be used as analgesic adjuncts in chest pain of suspected cardiac origin.

Follow the AHA ACLS chest pain algorithm within your level of training/licensure.

[Return to Specific Protocols](#)

## **COLD EMERGENCIES – FROSTBITE**

**EMR** (Emergency Medical Responder):

**INITIAL ASSESSMENT**

Be alert for and treat shock; see [Shock Protocol](#)

**FOCUSED / DETAILED ASSESSMENT**

Assess all frost bitten patients for systemic hypothermia

**ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT**

Protect injured areas from pressure, trauma and friction

Remove only wet coverings (i.e.: clothing, blankets etc.) from injured parts

Do not rub

Do not break blisters

Do not allow the limb to thaw if there is any chance the limb may refreeze before evacuation is complete

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start a peripheral IV (s) as necessary, TKO with NORMAL SALINE/LACTATED RINGERS Solution

**EMT** (Emergency Medical Technician) with medication endorsement:

Consider pain management; see [Pain Management Protocol](#)

**AEMT** (Advanced Emergency Medical Technician):

Consider pain management; see [Pain Management Protocol](#)

**AEMT** (Advanced Emergency Medical Technician) with I99 endorsement:

Consider pain management; see [Pain Management Protocol](#)

**PARAMEDIC:**

Consider pain management; see [Pain Management Protocol](#)

**NOTE:**

When practical, major re-warming should be left for a hospital setting.

Warmed humidified (< 104 degrees F) oxygen is preferred, when available.

Warmed (< 100 degrees F) IV fluids is preferred, when available

If a lower extremity has started to thaw, do not allow the patient to ambulate if possible.

[Return to Specific Protocols](#)

**NOTES**

## COLD EMERGENCIES - SYSTEMIC HYPOTHERMIA

### EMR (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Administer warmed (<104 degrees F) high flow oxygen per non-rebreather mask

If altered level of conscious, see [Altered Mental Status Protocol](#)

Determine core temp

If core temp <86 F (30 C) with signs of cardiac activity – assist ventilations with basic maneuvers, if > 86 (30 C) manage airway normally

Attach and utilize AED and follow protocol:

If patient temperature is > 86 F (30 C), follow AED protocol

If patient temperature is < 86 F (30 C) or unknown, administer one shock, then provide no further shocks till temperature >86F

#### FOCUSED / DETAILED ASSESSMENT

Identify mechanism of injury and be alert for other trauma

Remove only wet clothing and maintain the patient in a warm, draft free environment

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Handle all hypothermia patients with care; rough handling may precipitate ventricular fibrillation

If **unconscious** and hypothermic, maintain body temperature until a higher level of care is available

If **conscious**, add heat packs to the abdomen (not groin or axilla), lateral chest and neck to prevent additional heat loss

Maintain core temperature by keeping the victim warm with blankets

Warm fluids may be administered to a conscious alert patient

**All hypothermia patients with a GCS <13, are to be transported to KRMC**

### EMR (Emergency Medical Responder) with monitoring endorsement:

Determine glucose

**Adult** - If glucose is < 60 and patient has control of their airway, consider oral GLUCOSE

### EMT (Emergency Medical Technician):

If core temp < 86 F (30 C) with signs of cardiac activity – gently assist ventilations with basic maneuvers, if > 86 F (30 C) manage airway normally

### EMT (Emergency Medical Technician) with airway endorsement:

If core temp > 86 F (30 C) then consider advanced airway

## **COLD EMERGENCIES—SYSTEMIC HYPOTHERMIA Continued**

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:  
Start a peripheral IV(s), as necessary, TKO with NORMAL SALINE solution  
(en route, warmed to about 100 degrees if possible) run at 125ml/hour

**EMT** (Emergency Medical Technician) with medication endorsement:  
If glucose < 60,

**Adult** - consider GLUCAGON 1mg (IM/IN)

## **COLD EMERGENCIES—SYSTEMIC HYPOTHERMIA Continued**

**AEMT** (Advanced Emergency Medical Technician):  
If GLUCOSE is < 60:

**Adult** - Consider DEXTROSE 50% (50cc) (IV)  
                  DEXTROSE 10% (100cc) IV; May repeat every 5  
                  minutes to a max of 25g (250cc) for persistent  
                  hypoglycemia  
**Pediatric** - consider DEXTROSE 25%, 1cc/kg to a max of 25cc (IV)  
                  DEXTROSE 10%, 5cc/kg (IV/IO)

**AEMT** (Advanced Emergency Medical Technician) with I99 endorsement:  
If core temp <86 F (30 C) hold all other medication  
If core temp >86 F (30 C) intravenous medication may be administered but  
at longer than standard Intervals

### **NOTE:**

When practical, major re-warming should be left for a hospital setting.  
Warmed / humidified (<104 degrees F) oxygen is preferred, when available.  
Warmed (<100 degrees F) IV fluids is preferred, when available  
CPR should not be initiated in the field if: chest is frozen/non-compliant or  
the victim has been unquestionably submersed more than 1 hour and core  
temp > 30°C OR obvious lethal injury is present.  
Chest compression should never be done if clinical signs of functional cardiac  
activity are present even if a pulse is not palpable under field conditions.  
This includes victims who show any movement, spontaneous respiration,  
response to positive pressure ventilation or other signs of life.

## DIABETIC EMERGENCY

**EMR** (Emergency Medical Responder):

INITIAL ASSESSMENT

FOCUSED / DETAILED ASSESSMENT

Obtain pertinent and AMPLE medical history including: Insulin, or oral diabetic medications; type, dosage, time  
How much and when has patient eaten/drank today  
Recent or current illness, heavy exercise or high stress  
Consider pregnancy

ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Maintain body heat.  
Administer an oral substance high in simple sugar (if tolerated by patient)  
Do not delay transport for the administration of oral GLUCOSE agents

**EMR** (Emergency Medical Responder): with monitoring endorsement

Determine glucose level

**Adult** - If glucose level is < 60 and patient has control of their airway, consider oral GLUCOSE

**EMT** (Emergency Medical Technician) with medication endorsement:

If glucose < 60,

**Adult** - consider GLUCAGON 1mg (IM/IN/SQ)

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start a peripheral IV(s) as necessary, TKO with NORMAL SALINE

**AEMT** (Advanced Emergency Medical Technician):

Start a peripheral IV (s) as necessary, TKO with NORMAL SALINE

If glucose is 60-80 and patient is symptomatic:

Consider DEXTROSE 50% (25cc) IV. May repeat X1 for persistent hypoglycemia  
OR DEXTROSE 10% (100cc) IV; May repeat every 5 minutes to a max of 25g (250cc) for persistent hypoglycemia.

If glucose level is < 60 or unable to determine glucose then:

**Adult** - administer DEXTROSE 50% (50cc) IV; OR  
DEXTROSE 10% (100cc) IV; May repeat every 5 minutes to a max 25g (250cc) for persistent hypoglycemia.

**Pediatric**- administer DEXTROSE 25%, 2cc/kg (IV/IO) over 2 minutes  
**OR** DEXTROSE 10%, 5cc/kg (IV/IO)

If unable to initiate a peripheral IV and if glucose < 60, administer GLUCAGON;

If < 20 Kg 0.5mg (IM/IN)

If > 20 Kg 1mg (IM/IN)

**Neonate** (< 2 months) – administer 2cc/kg, D10W (IV)

### DIABETIC EMERGENCY Continued

**Paramedic** If prolonged transport, consider DEXTROSE 10% drip at 100ml/hr, to maintain blood glucose >80, checking blood glucose levels every 15-20 minutes.

**NOTE:** Insulin should not be given by anyone in the pre-hospital setting

[Return to Specific Protocols](#)

## DRUG OVERDOSE

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Be alert for and treat respiratory compromise; see [Dyspnea Protocol](#)

Be alert for seizures; see [Seizures Protocol](#)

Be alert for and treat shock; see [Shock-Medical Protocol](#)

If altered level of consciousness; see [Altered Mental Status Protocol](#)

Disability: LOC, AVPU, obtain [Glasgow Coma Scale](#) score

#### FOCUSED / DETAILED ASSESSMENT

Identify substance, and have container taken to the hospital

Estimate quantity

Time since exposure

Pertinent medical history including: chronic illness, medical problems within past 24 hours, medications and allergies

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Notify medical control as soon as possible

### **EMR** (Emergency Medical Responder): with monitoring endorsement

Determine glucose level

**Adult** - If glucose is < 60 and patient has control of their airway, consider oral GLUCOSE

### **EMR** (Emergency Medical Responder) **with Naloxone endorsement:**

If Narcotic or Opiate overdose is suspected administer:

**Adult** - NALOXONE for desired effect not to exceed 0.4 to 4 mg (IN)  
(be aware that the patient may become belligerent or hostile and may need restraint)

**Pediatric** - NALOXONE 0.2 mg/kg (IN), ½ dose each side

### **EMT** (Emergency Medical Technician) **with Naloxone endorsement:**

If Narcotic or Opiate overdose is suspected administer:

**Adult** - NALOXONE for desired effect not to exceed 0.4 to 4 mg (IN)  
(be aware that the patient may become belligerent or hostile and may need restraint)

**Pediatric** - NALOXONE 0.2 mg/kg (IN), ½ dose each side

### **EMT** (Emergency Medical Technician) with airway endorsement:

Establish advanced airway as needed

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start a peripheral IV(s), as necessary, with NORMAL SALINE/LACTATED RINGERS solution (en route)

### **EMT** (Emergency Medical Technician) with medication endorsement:

If glucose < 60,

**Adult** - consider GLUCAGON 1mg (IM/IN)

If Narcotic or Opiate overdose administer:

**Adult** - NALOXONE for desired effect not to exceed 0.4 to 4 mg  
(IV/ET/IM/IN/IO)



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(be aware that the patient may become belligerent or hostile and may need restraint)

**Pediatric** - NALOXONE 0.1 mg/kg (IV/ET/IM/IO), max 2 mg: or (IN) 0.2 mg/kg, ½ dose each side

**AEMT** (Advanced Emergency Medical Technician):

**If oral hypoglycemic or Insulin overdoses:**

**Adult** – If glucose < 60, consider THIAMINE 100mg IV,  
then DEXTROSE 50% (50cc) IV OR  
DEXTROSE 10% (100cc) IV, May repeat every 5 minutes to a  
max of 25g (250cc) for persistent hypoglycemia

If unable to initiate a peripheral IV, administer GLUCAGON 1mg (IM/IN)

**Pediatric** - DEXTROSE 25%, 2cc/kg (IV or IO) over 2 minutes

If unable to initiate a peripheral IV, GLUCAGON

if < 20 Kg 0.5mg (IM/IN)

if > 20 Kg 1mg (IM/IN)

**Neonate** (< 2 months) – administer 2cc/kg, D10W (IV)

**If narcotic or Opiate overdose administer:**

**Adult** - NARCAN for desired effect not to exceed 0.4 to 4 mg  
(IV/ET/IM/IN/IO)

(be aware that the patient may become belligerent or hostile and may need restraint)

**Pediatric** - NARCAN 0.1 mg/kg (IV/ET/IM/IO), max 2 mg: or (IN) 0.2 mg/kg, ½ dose each side

**PARAMEDIC:**

If Tricyclic antidepressants overdose with ventricular arrhythmias, widened QRS, tachycardia, altered mental status, decreased blood pressure or seizures, administer:

SODIUM BICARBONATE 1 mEq/Kg IV may repeat once; if ventilating the patient, increase rate to 18 to 20 breaths per minute

**If Narcotic or Opiate overdose administer:**

**Adult** - NALOXONE for desired effect not to exceed 0.4 to 4 mg  
(IV/ET/IM/IN/IO)

(be aware that the patient may become belligerent or hostile and may need restraint)

**Pediatric** - NALOXONE 0.1 mg/kg (IV/ET/IM/IO), max 2 mg: or (IN) 0.2 mg/kg, ½ dose each side

\*Additional doses may be administered as needed after contact with medical control

# Flathead County Pre-Hospital Protocols

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## **DYSPNEA – ADULT**

**EMR** (Emergency Medical Responder):

### INITIAL ASSESSMENT

- Administer high flow oxygen with a non-rebreather mask
- Use pocket mask AND assist respirations as needed
- Consider foreign body obstruction
- Assess bilateral breath sounds
- Check for tension pneumothorax
- With distress, and marked wheezing or very decreased breath sounds bilaterally administer patient prescribed metered-dose inhaler, two puffs of an ALBUTEROL or IPRATROPIUM metered-dose inhaler with a spacer; may repeat twice

### FOCUSED / DETAILED ASSESSMENT

- Obtain pertinent medical history

### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

- Allow patient to seek position of comfort

**EMT** (Emergency Medical Technician):

- Use bag valve mask to assist ventilation, as needed, 100% oxygen
- Consider CPAP (not to exceed 10cm H<sub>2</sub>O)

**EMT** (Emergency Medical Technician) with airway endorsement:

- Establish advanced airway as needed

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

- Start IV TKO with NORMAL SALINE/LACTATED RINGERS solution (en route).

**EMT** (Emergency Medical Technician) with medication endorsement:

- With distress, and marked wheezing or very decreased breath sounds bilaterally administer, ALBUTEROL 2.5mg mixed in 3cc of normal saline, NEBULIZED with oxygen or IPRATROPIUM 0.5mg mixed in 3cc of normal saline, NEBULIZED with oxygen or BOTH

**If pulmonary edema suspected** and blood pressure is greater than 160/90, consider three consecutive sprays/tablets 0.4mg of NITROGLYCERIN

**AEMT** (Advanced Emergency Medical Technician):

- For known asthmatic nonresponsive to ALBUTEROL, consider EPINEPHRINE 0.3 to 0.5 mg (1:1,000) IM

- Consider CPAP (not to exceed 15cm H<sub>2</sub>O)

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See protocol for: [CPAP \(Continuous Positive Airway Pressure\)](#)

### **DYSPNEA – ADULT Continued**

**AEMT** (Advanced Emergency Medical Technician) with I99 endorsement:  
If suspected tension pneumothorax including shock or increasingly severe respiratory distress, consider needle chest decompression.

**PARAMEDIC:**

Consider MORPHINE SULFATE 2-5 mg IV every 5-10 min up to 15 mg, if pulmonary edema suspected

Consider FUROSEMIDE 40 mg IV x1, if pulmonary edema suspected

Consider administration of ACE inhibitor, (Not currently approved for Flathead County)

If acute exacerbations of asthma or COPD consider steroids:

**Adult:** SOLU-MEDROL 40 mg x1 IV:

**Pediatric:** 1mg/kg IV up to max 40mg

If pulmonary edema suspected, consider IV nitro drip, (Not currently approved for Flathead County)

With complete obstruction of the airway and inability to intubate, consider cricothyrotomy.

If patient is under 12 years of age; consider needle cricothyrotomy with or without jet insufflation. Needle cricothyrotomy is the only approved procedure for children under 12 years old.

**NOTE:**

The conscious, dyspneic patient may rapidly deteriorate to respiratory failure.

PREPARE TO INTERVENE

Allergic reactions are frequently responsible for dyspneic episodes, thus inquiry for known allergies must include substances other than medications.

DO NOT withhold oxygen if it is needed.

DYSPNEA is a symptom, not a disease/injury.

Reassess for cause and correct as necessary / possible.

If patient has personal prescribed inhaler, allow the patient to use it, as prescribed; assist as necessary.

Specific cricothyrotomy technique is determined by the supervising Medical Director

[Return to Specific Protocols](#)

### EXCITED DELIRIUM/VIOLENT PATIENT

#### **EMR (Emergency Medical Responder)**

Secure safety of personnel, assure scene safety  
Attempt to calm or engage the patient  
Provide cool environment. Obtain measure temperature, if possible.  
Request law enforcement, if not already on scene  
Provide supplemental oxygen or ventilatory assistance as needed.  
Maintain O2 sats  $\geq 93\%$

#### **EMR (Emergency Medical Responder) with monitoring endorsement:**

Determine glucose  
Adult - If glucose is  $< 60$  and patient has control of their airway,  
consider oral GLUCOSE

#### **EMT (Emergency Medical Technician) with IV endorsement:**

Obtain IV access, if possible, while maintaining provider safety.  
Infuse NS/LR 10-20 ml/kg (2L max) if patient  
hyperthermic/tachycardic.

#### **Paramedic:**

KETAMINE 4 mg/kg IM (Maximum dose 400mg) or 1-2mg/kg IV  
(Maximum dose 100mg),  
then may follow with MIDAZOLAM 2 mg IV/IO slow push or 2mg IN  
(1mg per nare).

If hypersalivation occurs, consider ATROPINE 0.5 mg IV/IM/IO

#### **OR**

MIDAZOLAM 2mg IV/IO slow push or 2mg IN (1mg per nare).  
May repeat every 3-5 minutes as needed to a maximum of 10mg.  
Contact medical control for further sedation orders if patient remains  
uncontrollably violent or agitated.

#### **Note:**

If KETAMINE utilized, it is important to notify the receiving facility and to clearly  
note this during transition of care, as patient's mental status and course will be  
affected by this medication.

Hyperthermia is a significant risk. Active cooling should be utilized as necessary.

( See Montana Board of Medical Examiners: Montana Prehospital Treatment Protocols Major Review: 2015  
Current Revision# 1.9 on 9/2017 Page 30 of 79 )

### **Best Practice: Excited Delirium Syndrome**

**"Best Practice"** is an attempt to define a treatment that has less than full scientific validation. In many cases, the best practice is not known even though many EMS textbooks and curricula may identify a single or best method. The Montana Board of Medical Examiners will provide guidance to EMT personnel and Medical Directors through the development of best practices for various treatments and or skills. Developed best practices will identify the Boards opinion and recommendations for utilization of the treatment or skill. It will be the responsibility of the Medical Director to incorporate best practices into performance expectations of the EMTs they supervise.

#### **Background:**

Excited delirium syndrome (ExDS) is a potentially life-threatening condition in which a person is in a psychotic and extremely agitated state, with psychomotor agitation and often with violent behavior. Mentally, the subject is unable to process rational thoughts or to focus his/her attention. This is **not** a mere psychiatric behavioral condition but is an extreme condition with neurologic, metabolic and cardiovascular features.

#### **Presentation:**

Excited Delirium is characterized by extreme agitation, confusion and hallucinations, erratic behavior, diaphoresis, tachycardia, dilated pupils, hyperthermia, hyper-aggression, unexplained strength and endurance and making unintelligible sounds. They may exhibit behaviors that include clothing shedding, shouting out, and extreme thrashing when restrained. It is often found in correlation with alcohol and illicit drug use (cocaine, amphetamine, hallucinogens), and in those patients with preexisting mental illness.

#### **General Considerations:**

The medical director should consider beforehand which medication algorithm will be utilized and counsel providers in advance.

In this condition, a person can act erratically enough that he/she becomes a danger to self and to the public. Safety of you and your EMS crew cannot be over emphasized.

Other conditions may cause altered mentation, including hypoglycemia, hypoxia, seizures, head injury, stroke and sepsis. EMS providers must assess for and distinguish the patient with these conditions from the patient with ExDS.

Approach patient care with a calm manner. Attempt verbal de-escalation. Remove or limit unnecessary stimulation whenever possible.

Patients who have received multiple rounds of energy from TASERs by law enforcement in order to be subdued may be experiencing ExDS. It is important to coordinate with law enforcement and be prepared to treat once law enforcement gains physical control of the patient. Never transport a patient who is restrained by police without a police officer present who can remove or unlock restraints. Patient should not be "hog-tied" or restrained in a fashion that interferes with the patient's airway or breathing (such as prone position or "sandwiched").

Montana Board of Medical Examiners: Montana Prehospital Treatment Protocols Major Review: **2015** Current Revision# **1.9** on **9/2017** Page 31 of 79

### **Medical Considerations and Treatment:**

The patient with ExDS is at risk for sudden cardiovascular collapse, cardiopulmonary arrest and death. They must be closely monitored for evidence of hemodynamic instability or impending collapse. Often a period of cessation of struggle, even without sedation, may immediately precede cardiac arrest.

Patients with signs and symptoms of Excited Delirium (ExD) should not receive Diphenhydramine or Haldol as these drugs may exacerbate already existing hyperthermia or lower seizure threshold. Active cooling should be utilized if elevated body core temperature noted or suspected. The patient should be transported face up or in lateral recumbent position, never prone or face down to avoid positional asphyxia.

Sedation drug therapy, though beneficial and appropriate, may increase the risk of airway compromise. Continuous aggressive monitoring of airway and breathing must occur and care rapidly initiated if necessary.

### **Special Considerations:**

In the extremely agitated ExDS patient, IM KETAMINE may be administered to the lateral thigh through clothing.

Rarely, laryngospasm has been noted in KETAMINE administration. Usually this can be treated with high flow O<sub>2</sub>, airway maneuvers (e.g. jaw thrust) and positive pressure ventilation. Be prepared to aggressively manage the airway if necessary. If KETAMINE is utilized, infrequently the patient may experience excess salivation requiring suctioning +/- the administration of ATROPINE.

In the patient with ExDS, crystalloid fluids (LR/NS) 10-20mL/kg (up to 2L) should be administered if the patient is tachycardic and/or hyperthermic. Active cooling of the hyperthermic ExDS patient should be undertaken as soon as possible.

If ExDS patient experiences cardiac arrest, administer SODIUM BICARBONATE (2 amps) during first line treatment and then follow appropriate ACLS algorithm.

KETAMINE is available in multiple concentrations, increasing the risk of medication dosing errors. Ketamine 100mg/ml allows for IM usage, but can NOT be administered IV without proper dilution.

## FRACTURES OF EXTREMITIES

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Be alert for and treat shock; see [Shock-Medical Protocol](#)

#### FOCUSED / DETAILED ASSESSMENT

Identify mechanism of injury

Check pulses and sensation distal to the injury BEFORE and AFTER splinting (CMS)

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Protect injury from excessive movement

Careful assessment prior to and following manipulation is critical

Elevate injured limb if possible

Apply cold packs to injury site when practical

Apply manual traction when signs and symptoms suggest possible femur fracture

Fractures are splinted in the position found; however, realignment of a fracture may be necessary to facilitate packaging a patient; correct a circulatory compromise, neurological deficit or to allow transportation

Apply a traction splint when signs and symptoms suggest possible femur fracture, if tolerated by patient

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start a peripheral IV(s), as necessary, with NORMAL SALINE/LACTATED RINGERS solution (en route)

### **EMT** (Emergency Medical Technician) with medication endorsement:

Consider pain management; see [Pain Management Protocol](#)

### **AEMT** (Advanced Emergency Medical Technician):

Consider pain management; see [Pain Management Protocol](#)

### **AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Consider pain management; see [Pain Management Protocol](#)

### **PARAMEDIC:**

Consider pain management; see [Pain Management Protocol](#)

#### **NOTE:**

Do not allow the obvious fracture to obscure other assessment findings.

Contact medical control when diminished or absent neurovascular function is noted distal to the injury.

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## HEAD/NECK/SPINE INJURIES

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Manually stabilize head, neck and spine until secured on appropriate device  
Careful assessment before and after realignment is critical  
Return patient to an in-line neutral position if no resistance is met  
Realignment of the head neck and spine may be necessary to facilitate stabilization or correct an airway problem  
Elevate head of bed or backboard 30 degrees if head injury present  
Use padding or pre-padded back board any time a backboard is used to all times to protect patient from further injury

DO NOT HYPEREXTEND THE NECK WHEN OPENING THE AIRWAY  
Administer high flow oxygen, with a non-rebreather mask.  
Use pocket mask (BVM if present) to assist ventilations in the head injured patient with a decreased LOC, not to exceed 12 per minute.  
Be alert for and treat shock; see [Shock Protocol](#)  
Disability: LOC, AVPU, obtain [Glasgow Coma Scale](#) score

#### FOCUSED / DETAILED ASSESSMENT

Identify mechanism of injury  
Note cerebrospinal fluid or blood from ears, nose, and/or mouth  
Perform a neurological assessment on all four extremities (CMS)  
Record pupil size and shape

### **EMT** (Emergency Medical Technician):

Maintain and transport with entire immobilization device turned onto its side when possible airway issues are present

### **EMT** (Emergency Medical Technician) with airway endorsement:

Establish advanced airway as needed, maintaining in-line stabilization at all times

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start a peripheral IV(s), as necessary, TKO, with NORMAL SALINE/LACTATED RINGERS solution (en route)

### **AEMT** (Advanced Emergency Medical Technician) with I99 endorsement:

Establish advanced airway as needed, maintaining in-line stabilization at all times

### **PARAMEDIC**

If patient is intubated utilize CO2 monitor to maintain CO2 35-38 mmHg; for signs and symptoms of brain herniation increase ventilation rate to decrease the CO2 to 30-35 mmHg until the signs and symptoms resolve then return to a CO2 35-38 mmHg.



## HEAD/NECK/SPINE INJURIES Continued

### NOTE:

A backboard is not a stretcher; other devices are better designed for transporting patients

IF patient is unconscious, see [Altered Mental Status Protocol](#)

IF decreased blood pressure, consider other injuries.

Do not use TRACTION on the cervical spine.

IF a patient has a helmet in place and it is poor fitting or interferes with the airway, remove it in accordance to the American College of Surgeons guidelines.

Signs of herniation include: abnormal posturing, decreasing LOC, [GCS](#) >3 to 5 and one or both pupils fail to respond to light.

DO NOT ventilate > 12 times per minute unless signs of herniation exist

Patients with penetrating trauma to the head, neck or torso and no evidence of spinal injury should not be immobilized on a backboard.

Spinal precautions can be maintained by application of a rigid cervical collar and securing the patient firmly to the EMS stretcher, and may be most appropriate for: 1) patients who are found to be ambulatory at the scene, 2) patients who must be transported for a protracted time, particularly prior to interfacility transfer, or 3) patients for whom a backboard is not otherwise indicated.

### Criteria for Spinal Precautions (note- **only one of the following need be present to require spinal precautions**):

Mechanism consistent with potential for spinal injury (i.e. significant falls (greater than 20 feet for the adult and greater than twice the child's height), or motor vehicle collisions with significant mechanism of injury, or direct trauma to head, neck, or back)

Neck/back pain or tenderness

Abnormal neurological exam or complaint of symptoms (i.e. sensory/motor abnormalities, or history of LOC with current injury, or altered mental status)

Multi-system trauma (potential for distracting injury)

### Omission criteria (note- **all of the following must be met to allow for selectively not following spinal precautions**):

Normal neurological exam in cooperative patient (i.e. fully alert and oriented patient and

Normal sensory/motor exam

Normal vital signs

Absence of intoxicants

Absence of neck/back pain or tenderness

Absence of distracting injuries

No communication barriers (i.e. due to language, intellect, intoxication, emotional condition, etc.)

[Medical Director Statement On Spinal Immobilization](#)

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## Best Practice: Spinal Precautions

**"Best Practice"** is an attempt to define a treatment that has less than full scientific validation. In many cases, the best practice is not known even though many EMS textbooks and curricula may identify a single or best method. The Montana Board of Medical Examiners will provide guidance to EMT personnel and Medical Directors through the development of best practices for various treatments and or skills.

Developed best practices will identify the Boards opinion and recommendations for utilization of the treatment or skill. It will be the responsibility of the Medical Director to incorporate best practices into performance expectations of the EMTs they supervise.

### General Considerations:

Spinal precaution is a difficult issue to address primary due to the lack of scientific validation specifically regarding the out of hospital settings. Text books and curricula conflict with suggested "rule out" protocols for wilderness and search and rescue settings. Montana protocols states "...Manually stabilize head, neck and spine until secured on appropriate device..." and purposely does not identify the technique or specific device to utilize, nor does it identify the variability required to adapt to varying out of hospital situations.

**Manual Immobilization:** Manual c-spine immobilization refers to the practice of holding a patients head still until secured on a device. Text books and the National Educational Standards refer to this as "in-line stabilization". Since there is no evidence that this action is dangerous, this technique is reasonable. However, it should be noted that a patient who is able to comprehend instructions should have no difficulty in maintaining their neck in a neutral position and will not "push through the pain response" causing injuries. **Therefore, if faced with manpower shortages or other patient care priorities, providers should reconsider the decision to prioritize manual c-spine immobilization before or in lieu of other critical actions.**

**Cervical Collar:** Originally extrication collars were only used in extrication situations and sand bags were used to restrict movement when the patient was placed on back boards. The development and expanded use of c-collars was imitated to curtail the use of sand bags when immobilizing patients. Many of the currently available disposable c-collars today are more flimsy than the original extrication collars adding to the questioning of their effectiveness. It's commonly taught that a c-collar alone will not provide adequate stability, limiting both lateral and anterior-posterior motion, and therefore must be used in combination with manual immobilization until secured to a device. While studies exist showing c-collars do a relative reasonable job in limiting anterior-posterior motion (if correctly fitted and secured) it also shows that lateral motion restriction is inadequate. None of the studies deal with the application of the c-collar in an uncontrolled situation or an out-of-hospital setting. **Therefore, during extrication it is reasonable to utilize a c-collar to assist in controlling anterior-posterior movement of the cervical but lateral movement must be maintained with additional management. It is also necessary to reconsider the application of a c-collar when application is difficult due to situational issues or when clothing or body habitus would require dangerous movement of the neck while applying the c-collar.**

**Backboard:** While there is no evidence to support spinal immobilization in general, a great deal of time is spent educating EMTs in the process of spinal immobilization. We do this because we fear expanding the patient's injuries, injuries that clearly have a high impact on patient outcome and quality of life. Despite the amount of time spent training; patients are still transported and delivered to the medical facilities with spinal columns that have not

## Flathead County Pre-Hospital Protocols

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been maintained in a neutral position. It is apparent that the backboard is not without serious complications such as skin breakdown and patient discomfort. Patients presenting With normal mentation and possible cervical injuries seldom intentionally move (due to pain associated with such movement) and unstable c-spine injuries are conditions such as facet jumps and ligament rupture, are extremely rare. Those patients who present with an altered mentation, severe trauma or other serious conditions that often result in combative behavior are seldom immobilized without significant movement. **Therefore it would be reasonable to question the validity of broadly requiring immobilization of all potential c-spine injuries with the utilization of a backboard in the out-of-hospital setting.** The utilization of a backboard is reasonable to prevent further insult or injury, as long as we consider the complications they cause and consider those complications fully before making it a definite priority to immobilize on a backboard in the out- of- hospital setting. Backboards are best used for extrication, and have been associated with potential harm (increased pain and anxiety, skin breakdown, decreased respiratory capacity, and increased difficulty with airway management) during transport or when used for prolonged periods. There is no evidence that patients who are awake, able to follow commands, and neurologically intact benefit from transport on a full backboard, and **therefore it is reasonable to consider transporting these patients with spinal precautions consisting of a c-collar while secured to a stretcher. This method of transport is most applicable to patients with a prolonged transport (who could be extricated on a backboard then rolled or lifted with spinal precautions to the stretcher), or patients who are ambulatory at the scene (who can sit directly on the stretcher without need for extrication on a backboard).**

**Rapid Extrication vs. KED/Short Board:** Like immobilization in general, rapid extrication techniques taught in PHTLS and BTLS have not been based on evidence. Even though patients who sustain a significant mechanism of injury are statically more likely to have a spinal column injury and require the application of KED or other short board devices, there have been no reported cases of spinal cord injuries linked to the failure to use these devices. **Therefore the utilization of "rapid extrication techniques" is reasonable to prevent further insult or injury when faced with patient injuries or conditions that are considered "life threatening"; as long as they limit spinal cord movement and we consider the complications they may cause if used inappropriately. However without "life threatening" injuries, best practice is the utilization of spinal precautions.**

### **Flathead County Summary:**

The following patients will **always** require spinal immobilization including collar, head stabilization and a backboard:

1. Patients with Altered Mental Status and suspected head or spinal injury or significant mechanism of injury for potential spinal injury
2. Patients with neurologic deficits and mechanism of injury due to trauma

The following patients should always be considered for rigid immobilization:

1. Patients with major distracting injuries (long bone fractures, multiple injuries) who have significant mechanism for cervical spine injury. If concern for injury is heightened by any cervical spine tenderness or any complaints of neck pain, such patients should have rigid immobilization.

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# Flathead County Pre-Hospital Protocols

## INFLUENZA PANDEMIC PROTOCOL

### General Comment:

*In the event that there is a public health or safety emergency in which health care resources are overwhelmed by demand, the EMT response will have to adapt to the severity of the situation and the available resources. This Influenza Pandemic protocol is to be used as a guide in the development of a local plan (based on the severity of the situation and the available resources) remembering that the local situation will change frequently, perhaps daily or hourly. This protocol is assuming that an Influenza Pandemic has overwhelmed the medical community and normal EMT operating procedures are not feasible or practical. The Montana Board of Medical Examiners recognizes that an organized “**treat and release protocol**” would not only be advantageous but necessary to maintain control and order to providing medical assistance in the community.*

### ALL RESPONDERS: Physical Assessment:

When conducting your initial assessment a patient, maintain a safe distance (6 feet) and utilize personal protection until you determine if influenza like symptoms exist. If no symptoms exist, then proceed with your patient assessment as normal. If influenza symptoms are present; utilize the triage tool identified below to assess and determine the severity of the illness and assist in transport decisions. The local medical director must determine, in consultation with the local public health department and health care facilities, what scores would facilitate transport or treat and release; this could change depending on the evolving characteristics of the viral infection and may change daily or even hourly depending on available medical resources.

#### Demographics: Score

Age <6 months	: 2
6 mo – 5 yrs	1
5 yrs- 65 yrs	0
65 yrs- 75 yrs	1
>75 yrs	5
Caregiver at home	-1

#### O2 saturation: Score

> or = to 90%	0
86% - 89%	3
76% - 85%	4
= to or < 75%	5

#### Respiratory rate: Score

8 - 24 resp / min	0
24 – 60	2
< 8 or > 60	3

#### Heart rate: Score

< 6 mo &> 150 HR	2
Children > 6 mo &> 120 HR	2
Adults: > 110 HR	2

#### Blood pressure: Score

<6 mo& cap refill > 2 seconds	2
90 - 100mmHg	2
< 90mmHg	4

#### Temperature: Score

>103 F (39.4 C)	1
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#### Mental Status: Score

Confused	2
Unresponsive/ Obtunded	3

#### Able to tolerate PO? Score

Yes -	1
No	1

#### Co morbidities: Score

DM, asthma/COPD, CHF	1 each
Obesity	1
Pregnancy	2

#### Evaluator discretion: Score

Evaluator may assign subjective	-1, 0, or +1
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### Patients who score:

- >14 Patient should remain home with comfort measures provided
- 8 - 14 should be transported to the emergency department for treatment
- 4 - 8 should be directed for additional screening/assessment but does not require Ambulance transport
- < 4 should not be transported and should remain home with provided instructions

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**NOTES**

## HEAT EMERGENCIES

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Be alert for and treat shock; see [Shock-Medical Protocol](#)

Be alert for altered mental status; see [Altered Mental Status Protocol](#)

Administer high flow oxygen with a non-rebreather mask

#### FOCUSED / DETAILED ASSESSMENT

Skin condition and color

History, time of onset, existing medical conditions and current medications

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Remove from heat source

If patient is alert and oriented: encourage oral fluid intake, if tolerated  
(NO heated fluids or alcohol)

### **EMT** (Emergency Medical Technician):

If skin is hot and patient is unconscious: transport immediately

Do not delay transport for cooling in heat stroke patients

If advised by medical control, cool patient en route by sponge bathing with tepid water <100 F

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start a peripheral IV(s), as necessary, with NORMAL SALINE solution  
(en route)

### **AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Attach monitor

Identify rhythm and treat specific dysrhythmias within scope of practice, according to the most recent ACLS protocols and PALS protocols as approved by your medical director

If shivering occurs, consider:

**Adult** - FENTANYL 25-50MCG (IV/IO)

**Pediatrics** - (contact medical control for pediatric dose)

### **PARAMEDIC:**

If shivering occurs, consider:

**Adult** -MIDAZOLAM (VERSED) 1MG or FENTANYL 25-50MCG

**Pediatrics** - (contact medical control for pediatric dose)

### HEAT EMERGENCIES Continued

**NOTE**

Not all heat emergencies are environmental in nature; they may have infectious, neurological or pharmacological etiology.

High body temperature may cause seizures, particularly in preschool age children or patients with a known seizure disorder; see [Seizure Protocol](#)

When actively cooling patients, avoid shivering response

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## JOINT DISLOCATIONS

**EMR** (Emergency Medical Responder):

### INITIAL ASSESSMENT

Be alert for and treat shock; see [Shock-Medical Protocol](#)

### FOCUSED / DETAILED ASSESSMENT

Identify mechanism of injury

Dislocations are splinted in position found

Check and document pulse and sensation distal to the injury before and after splinting

Dislocations are splinted in the position found; however, realignment of a dislocation may be necessary to facilitate packaging a patient, correct a circulatory compromise, neurological deficit or to allow transportation

### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Protect injury from excessive movement

Elevate injured limb if possible (not hips)

Apply cold packs to injury site when practical

**EMT** (Emergency Medical Technician) with medication endorsement:

Consider pain management; see [Pain Management Protocol](#)

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

Start IV with NORMAL SALINE /LACTATED RINGERS solution (en route)

**AEMT** (Advanced Emergency Medical Technician):

Consider pain management; see [Pain Management Protocol](#)

**AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Consider pain management; see [Pain Management Protocol](#)

**PARAMEDIC:**

Consider pain management; see [Pain Management Protocol](#)

### **NOTE:**

Contact medical control when diminished or absent neurovascular function is noted distal to injury

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**NOTES**

## MULTIPLE TRAUMA

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

- Secure airway, while considering spinal precautions;  
See [Head/Neck/Spine Protocol](#)
- Administer high flow oxygen per non-rebreather mask
- Control all external bleeding; see [Bleeding Protocol](#)
- Determine bilateral breath sounds
- Continually assess and document respiratory status
  - Check for tension pneumothorax, tracheal deviation and/or subcutaneous emphysema
- Dress open chest wound with occlusive dressing secured to the chest wall forming a flutter valve
  - In open chest wounds, watch the patient closely for signs of developing tension pneumothorax
- Impaled object should be stabilized in place
- Other injuries permitting, patient should be allowed to seek position of comfort
- Disability: LOC, AVPU, obtain [Glasgow Coma Scale](#) score

#### FOCUSED / DETAILED ASSESSMENT

- Identify mechanism of injury and treat injuries in order of priority, according to Protocol

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

- Take and record vital signs every 5 minutes
- Follow local trauma facility activation criteria

### **EMT** (Emergency Medical Technician)

- Secondary survey and treatment may be completed en route to the hospital
- If immobilized, maintain and transport with entire immobilization device turned onto its side when situation warrants.
- Transport obvious pregnant patients on her left side or elevate right hip or physically shift uterus to the left side

### **EMT** (Emergency Medical Technician) with airway endorsement:

- Establish advanced airway as needed

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

- Start (2) IV(s) with NORMAL SALINE /LACTATED RINGERS solution (en route)

Limit fluid administration with boluses of 250 ml in adults to maintain a systolic B/P of 90 or palpable radial pulse

### **EMT** (Emergency Medical Technician) with medication endorsement:

- Consider pain management; see [Pain Management Protocol](#)

## **MULTIPLE TRAUMA Continued**

**AEMT** (Advanced Emergency Medical Technician):

Consider pain management; see [Pain Management Protocol](#)

**AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Attach monitor

Consider pain management; see [Pain Management Protocol](#)

Consider needle decompression of chest if tension pneumothorax is suspected.

**PARAMEDIC:**

Consider pain management; see [Pain Management Protocol](#)

Administer TXA to following patients:

See [Tranexamic Acid Protocol](#) (TXA) on page 90

### [Trauma Alert Criteria](#)

**NOTE:**

If your patient might be pregnant, remember survival of the fetus depends on the survival of the mother

EARLY TRANSPORT IS INDICATED FOR MULTI-SYSTEM TRAUMA PATIENTS

DO NOT DELAY TRANSPORT for IV or medication administration, do en route

Communicate with transport agency as soon as possible

Adhere to your local trauma systems policy for transport direction.

In cases of penetrating trauma, rapid transport is priority. Except for emergency airway management, all other interventions should not delay transport.

Immobilize patient as indicated

In a patient with altered mentation, a cervical collar alone WILL NOT provide secure cervical spine immobilization

DO NOT manipulate the cervical spine to apply a cervical collar

Do not use TRACTION on the cervical spine

IF a patient has a helmet in place and it is poor fitting or interferes with the airway, remove it in accordance to the American College of Surgeons guidelines

If injury is in the upper abdomen, consider the possibility of chest injuries

Injury to the abdomen may cause vomiting; protect the airway

Give nothing by mouth

Determine if the patient is pregnant. Keep eviscerated bowel covered with a moist dressing

Immobilize impaled objects in place

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## **NERVE AGENT**

(MARK I, MARK II or Duo Dote – AUTO-INJECTOR)

### **PRE HOSPITAL PROVIDER GOALS:**

- To protect themselves and other pre hospital responders from any significant toxic exposure.
- To obtain accurate information on the health effects of the nerve agent and the appropriate pre-hospital evaluation and medical care for victims.
- To minimize continued exposure of the victim and secondary contamination of health care personnel by ensuring that proper decontamination has been completed prior to transport to a hospital emergency department.
- To provide appropriate pre hospital emergency care consistent within their scope of practice.
- To prevent unnecessary contamination of their transport vehicle or equipment.

### **GENERAL**

The nerve agents of known military importance are GA (Tabun), GB (Sarin), GD (Soman), GF, and VX.

### **ASSESSMENT** (of the hazards):

**Physical Characteristics** – Nerve agents under temperate conditions are liquids, not gases as they erroneously called (“nerve gas”). They are clear and colorless, they have no taste, and most are odorless, although GD and GA are said to have slight odors. GB is the most volatile, but it evaporates less quickly than does water. The volatility of the other “G agents” is GD>GA>GF. VX is similar to light motor oil, and although liquid VX produces a slight amount of vapor it generally is not considered to be a vapor hazard unless the ambient temperature is very warm.

### **Signs and Symptoms:**

After a small vapor exposure: Miosis constricted pupils), runny nose, shortness of breath.

After a large vapor exposure: Loss of consciousness, convulsions, apnea and flaccid paralysis.

After a small to moderate liquid exposure: Localized sweating, fasciculations; nausea, vomiting, diarrhea, feeling of weakness (may start hours later).

After a large liquid exposure: Loss of consciousness, convulsions, apnea and flaccid paralysis.

**Patient Treatment** (In general, this is the responsibility of the EMT or Paramedic Assign highest priorities to ABC and decontamination.

Complete primary and secondary surveys as conditions allow.

Bear in mind the chemical specific information.

In multiple patient situations, begin proper triage procedures.

Treat presenting signs and symptoms as appropriate and when conditions allow.

Administer orders of the designated hospital when conditions allow.

Perform invasive procedures only in contaminated areas.

Reassess the patient frequently because many chemicals have latent physiological effects.

## Flathead County Pre-Hospital Protocols

### **NERVE AGENT Continued**

#### Recommendations for Initial Therapy

<b>Type of Exposure</b>	<b>Symptoms</b>	<b>Treatment</b>	<b>Comments</b>
<b>Mild Vapor Exposure</b>	Miosis alone	No treatment	The presence of miosis and rhinorrhea require observation only
	Rhinorrhea	Depends on amount of rhinorrhea and amount of discomfort	The presence of miosis and rhinorrhea require observation only
<b>Moderate Vapor Exposure</b>	Miosis, rhinorrhea, shortness of breath, wheezing, secretions, muscle weakness, GI effects (vomiting and diarrhea)	One or two MARK I kits (repeat doses every 5 – 10 minutes via MARK I kit; total of 1,800 mg 2- PAMCI)	Be more aggressive with moderate vapor exposures.
<b>Severe Vapor Exposure</b>	Unconscious, seizing, flaccid, apnea	-Three MARK I kits ASAP -Airway / Ventilation / O2	The antidotes should be administered as early as possible because airway management will not be possible until atropine reduces the bronchoconstriction. After administering the antidote, immediately obtain a definitive airway. Oxygenate the patient and suction secretions.
<b>Mild Liquid Exposure</b>	Localized sweating fasciculations	<ul style="list-style-type: none"> <li>One MARK I kit</li> </ul>	
<b>Moderate Liquid Exposure</b>	Gastrointestinal effects (vomiting, diarrhea)	<ul style="list-style-type: none"> <li>EMT's – One MARK I kit (repeat atropine in 5 – 10 minutes if effects worsen)</li> </ul>	Oxygen may be needed in those with cardiac or pulmonary disease who have severe breathing difficulty, but generally is not necessary.
<b>Severe Liquid Exposure</b>	Unconscious, seizing, flaccid, apnea	- Three MARK I kits ASAP - Airway/Ventilation/ O2	The antidotes should be administered as early as possible because airway management will not be possible until atropine reduces the bronchoconstriction. After administering the antidote, immediately obtain a definitive airway. Oxygenate the patient and suction secretions.

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## NEONATAL (< 2 months) RESUSCITATION

**EMR** (Emergency Medical Responder):

### INITIAL ASSESSMENT

Establish and protect airway

Suction secretions (mouth, oropharynx then nose) dry infant to provide stimulation and prevent chilling; keep infant warm, keep head covered

Check RESPIRATORY rate:

IF rate is > 20 or crying, NO ACTION

IF rate is < 20, tactile stimulation, provide assisted ventilation with pocket mask as needed

Check HEART rate:

IF rate > 100, NO ACTION

IF rate 60 - 100, ventilate with high flow oxygen

IF rate < 60, VENTILATE with high flow oxygen and begin chest compressions

Check COLOR:

Normal, NO ACTION

Central cyanosis, provide 100% oxygen and assist ventilation as needed

### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Protect from injury during movement

**EMR** (Emergency Medical Responder) with monitoring endorsement:

Determine glucose

**EMT** (Emergency Medical Technician):

Use bag valve mask to assist ventilation with 100% oxygen, as needed

**AEMT** (Advanced Emergency Medical Technician):

If GLUCOSE < 60, administer 2cc/kg, D10W (IV)

If respiratory rate is not maintained with stimulation, administer NARCAN 0.1 mg/kg (IM/IV/ET/IO)

**AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Consider advanced airway if transport time greater than 20 minutes or unable to bag correctly

Attach monitor

If heart rate remains < 60 after 30-60 seconds of adequate chest compressions and ventilation with high flow oxygen, administer EPINEPHRINE 0.01 - 0.03 mg/kg of (1:10,000) (IM/IV/ET/IO)

### NOTE:

ACROCYANOSIS (blue extremities, pink trunk) may be NORMAL for newborns.

Newborn bradycardia is due to decreased oxygenation

Meconium is fetal stool, which if aspirated can cause neonatal respiratory problems.

**Do not delay transport to establish airway at the scene.**

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**NOTES**

## OBSTETRICAL EMERGENCIES

### EMR Responder:

#### INITIAL ASSESSMENT

If delivery is imminent:

Visually examine patient's perineum

If the perineum is bulging or baby's head is crowning, prepare to deliver baby

If the patient has had one or more normal deliveries and complains of urge to "push", "bear down," or "have a bowel movement," prepare to deliver baby

If complications are apparent, i.e., foot or cord visible or if severe vaginal bleeding; see [Abnormal Delivery Protocol](#) and contact transporting agency immediately

If seizures, refer to [Seizure Protocol](#)

#### FOCUS / DETAILED ASSESSMENT

Reassure mother

Obtain pertinent medical and obstetrical history

Membranes ruptured? Color of fluid?

Date of expected birth? Other births?

History? Onset, frequency and duration of contractions?

### EMT (Emergency Medical Technician):

When the delivery is not proceeding normally and in which the mother displays sudden onset of severe abdominal pain or shock, place on high-flow oxygen, treat for shock; see [Shock-Medical Protocol](#) and transport immediately. Notify receiving facility en route

If no visible signs of impending delivery, transport patient on her left side, elevate right hip or gently shift uterus to the left side; transport patient at a normal rate of speed

### EMT (Emergency Medical Technician) with IV/IO initiation endorsement:

Start TKO IV, with NORMAL SALINE/LACTATED RINGERS solution (en route, unless delivery is imminent)

If delivery occurs through meconium stained amniotic fluid AND the newborn is vigorous, treat normally but notify receiving hospital on arrival

### AEMT (Advanced Emergency Medical Technician) with I99 endorsement:

If delivery occurs through meconium stained amniotic fluid AND the newborn is nonvigorous (depressed respirations or depressed muscle tone (floppy) or heart rate < 100) suction until clear and consider intubation. Notify receiving facility as soon as possible

### PARAMEDIC):

If heavy bleeding following delivery of the placenta:

Mix 20 units PITOCIN in 1000 ml NORMAL SALINE or LACTATED RINGERS and run wide open for the first liter, unless directed otherwise by medical direction

If seizures:

Administer 4 grams of IV MAGNESIUM SULFATE over 5 minutes, contact medical control if seizures continue



## OBSTETRICAL EMERGENCIES Continued

**NOTE:**

Consider the possibility of pregnancy in any female of childbearing age (any menstruating female) with complaints of vaginal bleeding, menstrual cycle irregularity, abdominal pain (cramping), low back or shoulder pain

If cord is around baby's neck during delivery, slip cord over baby's head before shoulders deliver to avoid strangulation of baby; if cord won't slip, clamp cord in two places and cut cord between the two clamps. See [Abnormal Delivery Protocol](#), and contact transporting agency immediately.

The greatest risks to the newborn infant are airway obstruction and hypothermia. KEEP BABY COVERED (including the head), WARM, DRY AND KEEP AIRWAY SUCTIONED with bulb syringe.

Greatest risk to the mother is postpartum hemorrhage; watch closely for signs of hypovolemic shock and excessive vaginal bleeding. If the placenta is delivered, externally massage the uterus till firm.

When using bulb syringe to remember to squeeze the bulb PRIOR to insertion in baby's nose or mouth, to suction; do not contact the posterior pharynx which may cause bradycardia

Spontaneous or induced abortions may result in copious vaginal bleeding; Reassure the mother, provide emotional support, treat for shock; see [Shock Protocol](#), Notify transport agency immediately. Notify receiving facility. Transport fetus, placenta and any tissue to the hospital with the patient

Obtain APGAR if possible @ 1 and 5 minute interval

### APGAR Scoring

Sign	0	1	2
Activity	Limp	Some Flexion	Active Motion
Pulse	Absent	<100	>100
Grimace	None	Grimace	Cough or sneeze Pulls away
Appearance	Central Cyanosis Blue/Pale	Central Pink Peripheral Blue	Completely Pink
Respiration	Absent	Slow, ineffective, Irregular	Good and Crying

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## PAIN MANAGEMENT

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

Assess pain using a pain scale before and after treatment(s)

#### FOCUSED / DETAILED ASSESSMENT

Assess underlying cause for pain

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Treat underlying cause for pain: re-positioning, bandaging, splinting, elevation, traction, apply cold packs

Provide psychological support: interact with patient to provide distraction from the pain; allow parent to be accompany pediatric patient if possible

### **EMT** (Emergency Medical Technician) with medication endorsement:

Hold pain management option if any of the following are present: blood pressure less than 100 systolic; respiratory depression; active labor; closed head injury; sudden onset of headache; altered mental status related to injury and/or allergy

**Adult** – 5mg/10mg MORPHINE Auto-injector

### **AEMT** (Advanced Emergency Medical Technician):

Hold pain management option if any of the following are present: blood pressure less than 100 systolic; respiratory depression; active labor; closed head injury; sudden onset of headache; altered mental status related to injury and/or allergy

**Adult** – NITROUS OXIDE (Not yet authorized for Flathead County)

### **AEMT** (Advanced Emergency Medical Technician): with medication endorsement

Hold pain management option if any of the following are present: blood pressure less than 100 systolic; respiratory depression; active labor; closed head injury; sudden onset of headache; altered mental status related to injury and/or allergy

**Adult** – 5mg/10mg MORPHINE Auto-injector

### **AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Hold pain management option if any of the following are present: blood pressure less than 100 systolic; respiratory depression; active labor; closed head injury; sudden onset of headache; altered mental status related to injury and/or allergy

**Adult** - MORPHINE 2-5 mg (IV/IO/IM); Repeat every 5 minutes as needed up to a maximum of 15 mg (as long as vital signs are stable)

# Flathead County Pre-Hospital Protocols

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## PAIN MANAGEMENT CONT.

OR FENTANYL 25-50 mcg, (IV/IO/IM/IN) repeat every 5 minutes, not to exceed a maximum of 150 mcg

Consider antiemetic of choice for nausea or vomiting:

**Adult** - ZOFRAN 4 mg IV, and may be repeated x1 up to 8 mg.  
If QT prolongation is present or suspected, do not use Zofran.  
Familiarize yourself with QT prolonging drugs.  
See Appendix [Drugs that Prolong QT](#)

**ADULT** – PHENERGAN 12.5 to 25 mg IV/IM.

**Pediatric** - MORPHINE 0.1 mg/kg to a max of 5 mg (IV/IO/IM/IN), after 5 minutes, may repeat once, if vital signs are stable OR

FENTANYL 0.5 mcg/kg to a max of 50 mcg (IV/IO/IM/IN), after 5 minutes, may repeat once, if vital signs are stable

Consider antiemetic of choice for nausea or vomiting:

**Pediatric** –ZOFRAN 0.1 mg/kg IV up to max 4 mg.

## PARAMEDIC:

May administer alternative analgesics of choice if BP systolic > 100  
Use only KETAMINE if BP systolic < 100

Consider KETAMINE 0.1 to 0.5 mg/kg (IV/IM/IN) to a maximum of 0.5 mg/kg for Adults

Ketamine approved for Peds use IV/IM/IN (intranasal) 0.2mg/kg IM up to 20mg. If greater than 40kg can use adult algorithm. No increased dose at this time for IM or IN use.

**NOTE:** Whereas 0.5 mg/kg is permitted without contacting Medical Control, the practitioner should always start with the lowest dose possible and then titrate up as necessary until the desired therapeutic effect is achieved. Any dosing above 0.5 mg/kg must be approved by Medical Control on an individual bases. ( Ketamine may be given IV/IM/IN )

Consider benzodiazepine for muscle spasm or additional pain control and as an adjunct for pain control:

DIAZAPAM (VALIUM) 5mg IV, OR  
MIDAZOLAM (VERSED) 2 TO 4 mg IV/IM, OR  
LORAZEPAM (ATIVAN) 2 mg IV/IM

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## **PEDIATRIC RESPIRATORY DISTRESS**

**EMR** (Emergency Medical Responder):

### INITIAL ASSESSMENT

If ADEQUATE ventilation:

- Let child assume position of comfort.
- Administer high flow oxygen with a non-rebreather mask or "BLOW BY"
- Consider administration of patient prescribed ALBUTEROL INHALER, with spacer

If INADEQUATE ventilation:

- Administer patient prescribed ALBUTEROL INHALER, with spacer
- Consider foreign body obstruction

If child has croupy cough or epiglottitis is suspected:

- Put child in position of comfort
- DO NOT attempt any procedure or maneuver which may increase child's anxiety unless absolutely necessary to preserve airway (this includes examination of the oropharynx)
- Administer high flow oxygen. Use pocket mask to ventilate as necessary.
- Epiglottitis may require forceful ventilation
- Constantly monitor airway for patency in any unconscious child

### FOCUSED / DETAILED ASSESSMENT

Obtain pertinent medical history if time allows

**EMT** (Emergency Medical Technician):

Use bag valve mask to assist ventilation, as needed, 100% oxygen

**EMT** (Emergency Medical Technician) with airway endorsement:

If unconscious and age >8, establish advanced airway as needed

**EMT** (Emergency Medical Technician) with medication endorsement:

With respiratory distress and wheezing bilaterally, administer 2 puffs ALBUTEROL via metered dose inhaler with a spacer

With respiratory distress, and wheezing or very decreased breath sounds bilaterally administer:

- ALBUTEROL premix (2.5 mg mixed in 3cc of NORMAL SALINE) via nebulizer with oxygen
- If less than one year of age use 1.25mg of ALBUTEROL in 3cc of normal saline

If patient does not improve, consider continuous nebulized ALBUTEROL premix (2.5 mg mixed in 3cc of NORMAL SALINE)

## **PEDIATRIC RESPIRATORY DISTRESS Continued**

### **AEMT** (Advanced Emergency Medical Technician):

If patient has expiratory Stridor, administer EPINEPHRINE (1:1,000) 0.5 mg in 2cc NORMAL SALINE NEBULIZED with oxygen, if less than one year of age use 1.25mg of albuterol in 3cc of normal saline

For known asthmatic nonresponsive to ALBUTEROL, consider EPINEPHRINE 0.3 to 0.5 mg (1:1,000) IM

### **AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Consider advanced airway if impending respiratory arrest

If unconscious and age >8, establish advanced airway as needed

### **PARAMEDIC:**

With complete obstruction of the airway and inability to intubate, consider cricothyrotomy.

If the patient is under **12 years of age**; consider needle cricothyrotomy with or without jet insufflation. Needle cricothyrotomy is the only approved procedure for children under 12 years old.

### **NOTE:**

When dealing with pediatric patients consider allowing a parent to accompany. The conscious, dyspneic child may rapidly deteriorate to from respiratory distress to respiratory failure

**PREPARE TO INTERVENE.** Be prepared to ventilate.

Allergic reactions are frequently responsible for dyspneic episodes, thus inquiry for known allergies must include substances other than medications.

DYSPNEA is a symptom, not a disease/injury, reassess for cause and correct as necessary/possible.

**Do not delay transport to establish advanced airway at the scene.**

Specific cricothyrotomy technique is determined by the supervising Medical Director

# Flathead County Pre-Hospital Protocols

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## POISONING

**EMR** (Emergency Medical Responder):

### ***PROTECT YOURSELF FROM POSSIBLE EXPOSURE FIRST!***

#### INITIAL ASSESSMENT

Be alert for and treat respiratory compromise; see [Dyspnea Protocol](#)

Be alert for and treat shock; see [Shock-Medical Protocol](#)

Be alert for seizures; see [Seizure Protocol](#)

If unconscious, see [Altered Mental Status Protocol](#)

#### FOCUSED / DETAILED ASSESSMENT

Identify substance, and if reasonable, have it taken to the hospital with the patient

Estimate quantity

Time since exposure

Obtain pertinent medical history: chronic illness, medical problems within past 24 hours, medications and allergies

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

##### Inhaled poisons: ***BEWARE OF ENCLOSED OR CONFINED AREAS***

Immediately get the person to fresh air

Avoid breathing fumes

Open doors and windows wide

If victim is not breathing, start artificial respiration

Administer oxygen, 100% non-rebreather, assist ventilation as necessary

##### Dermal exposure:

Remove contaminated clothing and flood skin with water for 10 minutes

Then wash gently with soap and water and rinse

Poison in the eye; flood the eye with lukewarm (not hot) water poured from a large glass 2 or 3 inches from the eye, repeat for 15 minutes, have the patient blink as much as possible while flooding the eye, do not force the eyelid open

##### Swallowed poisons:

DO NOT give anything by mouth until you have called for advice

**EMR** (Emergency Medical Responder) with monitoring endorsement:

Determine GLUCOSE

**Adult** - If glucose is < 60 and patient has control of their airway, consider oral GLUCOSE

**EMT** (Emergency Medical Technician) with medication endorsement:

If glucose < 60,

**Adult** - consider GLUCAGON 1mg (IM/IN)

**EMT** (Emergency Medical Technician) with airway endorsement:

Establish advanced airway as needed

## POISONING Continued

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:  
Start IV with NORMAL SALINE/LACTATED RINGERS solution (en route)

**AEMT** (Advanced Emergency Medical Technician) with I99 endorsement:  
Attach monitor  
If suspected Organophosphate/carbonates (pesticides/insecticides) poisoning

**Adult** - ATROPINE 2 to 4 mg (IV/IO/IM/ET)  
Dose may be repeated one time in 5 minutes, call medical control

**Pediatric** - ATROPINE 0.02 mg/kg (IV/IO/IM/ET) with a minimum of 0.15mg  
Dose may be repeated one time in 5 minutes, call medical control

### PARAMEDIC:

If Cyanide poisoning and/or hydrogen sulfide (sewer gas)  
Utilize CYANIDE antidote kits as available on site or administer AMYL  
NITRATE vials (30 seconds of each minute and replace vial every 3 minutes);  
**do not delay transport for administration.**

The use of the Cyanokit for cyanide poisoning and smoke inhalation victims is currently being reviewed by the BOME. It is anticipated that approval will be granted sometime in the first quarter of 2014.

### NOTE:

Do not delay transport to administer antidotes  
Treat patient not the poison!  
DO NOT administer product label antidotes in the field; product label antidotes are frequently wrong  
If patient is unconscious or semi-conscious, transport on left side, protect the airway and DO NOT administer oral agents  
If ingestion is by a small child, consider other children present as potential poisonings  
Contact the receiving facility as soon as possible.



### **RESUSCITATION TRIAGE**

1. Do not initiate resuscitation in the patient who has obvious signs of death:
  - a. Injuries incompatible with life, i.e. decapitation, incineration, or
  - b. Dependent lividity, or
  - c. Rigidity or rigor, or
  - d. Decomposition.
2. Do not initiate resuscitation or if initiated, discontinue resuscitation when the following has been determined:
  - a. Obvious high energy blunt trauma injuries with no signs of life (breathing, coughing, moving, consciousness), no pulse, and asystole if cardiac monitor available, or
  - b. Cardiac arrest in a normothermic patient (EMT obtained core temperature > 35 degrees C) unresponsive to the first 15 minutes of standard treatment, or
  - c. Any pulseless, breathless patient in a multiple casualty situation where all resources are required for the surviving patients. Remember lightning strikes may be an exception.
3. For patients with a completed POLST document follow their protocols/instructions.

It is not REQUIRED by Flathead County Medical Director to run an ECG strip if you don't initiate CPR based on the criteria listed above, nor is it REQUIRED that you call Online Medical Control if you don't initiate CPR. Follow your own agency policy in this matter.

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## Best Practice: RESUSCITATION TRIAGE

*"Best Practice" is an attempt to define a treatment that has less than full scientific validation. In many cases, the best practice is not known even though many EMS textbooks and curricula may identify a single or best method. The Montana Board of Medical Examiners will provide guidance to ECP personnel and Medical Directors through the development of best practices for various treatments and or skills. Developed best practices will identify the Boards opinion and recommendations for utilization of the treatment or skill. **It will be the responsibility of the Medical Director to incorporate best practices into performance expectations of the ECPs they supervise.***

### **General Considerations:**

Resuscitation is a difficult issue to address due to the variations of local ECP experience, available resources and distances we must deal with in Montana. This discussion is an attempt to assist the local medical director in determining how best to coordinate local resources in making tough yet critical time dependent decisions. The issues are primarily threefold, (1) when resuscitation efforts do not need to be started, (2) when resuscitation efforts can be discontinued when begun by others prior to your arrival, and (3) when your professional resuscitation efforts can be discontinued. Another issue must be discussed, on-scene resuscitation versus transportation during resuscitation efforts. Each will be addressed to assist the local medical director and the local receiving facility to provide direction to ECPs under their oversight.

Of course, in every case discussed, documentation must be complete and detailed, and part of termination of efforts in the field is providing appropriate care and comforting to any family, witnesses, or bystanders present. Any service using these guidelines to cease resuscitative measures in the field should ensure appropriate training for providers in conveying death notification and associated bystander counseling.

In addition, all unattended deaths in the field are coroner's cases per Montana law. Care must be exercised to not unnecessarily disturb the scene. Do not remove ECG patches or airway devices, pick up material, etc. that could potentially alter the scene. Prior to leaving the scene where a death is declared, make sure an officer (either fire or police) is in charge of the scene, or the coroner is on scene.

**When resuscitation does not need to be begun** (when your duty to act is not expected): While the American Heart Association has provided guidance to providers when CPR and resuscitation efforts should not be begun, the American Heart Association produces recommendations. Therefore, it was felt that the protocols should identify conditions in which your scope of practice and duty to act is clearly identified. Those guidelines are identified above, following a complete assessment.

**When resuscitation efforts can be discontinued once started by lay persons prior to your arrival:** This becomes more difficult to simply establish a standard of black and white. Various situations can be experienced by the ECP upon their arrival. While it might be simplistic to state if a long response time to the scene (>15 minutes) and the patient has been receiving

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CPR by family or bystanders and your initial assessment reveals a pulseless, breathless patient and your AED states no shock advised; could result in discontinuing resuscitative measures. Often, it's more complex than that. Considerations that must be taken into account; cause of the arrest, time of discovery of the patient in arrest, time CPR was begun, length of CPR, quality of CPR, family or bystanders doing the CPR prior to your arrival. All of these can and should result in the ECP making a decision that is in the best interest of the patient and family. What we do know is that once the patient is pulseless and breathless, the patient deteriorates rapidly. Effect CPR can slow that deterioration but time is still a major factor. Therefore, when response times are excessive (>15 minutes) and transport times are equal to or even greater, we must take into consideration the impact on the family and ECP staff and consider discontinuing resuscitative efforts. This is not to be taken lightly and all efforts should be taken if in doubt. It's imperative that the medical director, local facility and ECPs have a discussion and the medical director establish local considerations that ECP's can utilize when faced with this scenario, prior to standing over the patient and attempting to call medical control on each case.

**When your resuscitation efforts can be discontinued once started:** As identified in the above protocol, resuscitative efforts can be discontinued if: The patient did not suffer an EMS-witnessed cardiac arrest, did not receive a shock at any time during the resuscitation, did not achieve prehospital return of spontaneous circulation, received greater than 3 cycles of high quality CPR and an appropriate rhythm analysis. This can be considered; however, this would not justify not utilizing a Paramedic response if reasonably available. This is not to be taken lightly and all efforts should be taken if in doubt. It's imperative that the medical director, local facility and ECPs have a discussion and the medical director establish local considerations that ECP's can utilize when faced with this scenario, prior to standing over the patient and attempting to call medical control on each case.

**On-scene resuscitation versus resuscitation in a moving vehicle:** Many high-volume EMS services across the county have developed protocols which discourage transporting patients receiving resuscitative measures for reasons of provider safety and the ability to provide high quality compressions while in a moving vehicle. While the choice not to transport your patient to an emergency room and resuscitate on the scene might seem an easy one, it should be done with great consideration of the variations that might contribute to success. Some of the obvious variables that must be considered are; distance to the receiving emergency room, frequency of ECPs providing resuscitation (experience), level of direct oversight from medical director, availability of additional personnel or assistance (utilized while in route), and the obvious one...is the standard of care equivalent to that of the emergency room that would be receiving the patient. These variables should be discussed and evaluated by the local receiving facility and medical director, so that the medical director can determine the best patient care a local EMS configuration can provide. This will not be easy and may change from time to time as variables change.

## Flathead County Pre-Hospital Protocols

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## SEIZURES

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

- Administer high flow oxygen with non-rebreather mask
- If possible place patient on his/her side facing you to facilitate airway management

#### FOCUSED / DETAILED ASSESSMENT

- Protect patient from injury
- Remove hazards from immediate area
- Avoid unnecessary physical restraint
- Obtain pertinent medical history from family and bystanders including;
  - Known seizure disorder
  - Medications, what medication/when last taken
  - Check for medical tag and medications
  - Alcohol or drug intake
  - Recent trauma; see [Head/Neck/Spine Protocol](#)
  - Note fever, particularly in children under 5 years of age;
  - See [Heat Protocol](#)
  - Duration of seizure

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

- Protect patient from injury during seizure

- Do not transport during active seizures UNLESS seizure lasts in excess of 5 minutes or patient is significantly injured. Attempt to contact medical facility prior to transport
- If transport during seizure becomes necessary, pad stretcher side rails to protect Patient

### **EMR** (Emergency Medical Responder) with monitoring endorsement:

- Determine glucose
- Adult - If glucose is < 60 and patient has control of their airway, consider oral GLUCOSE

### **EMT** (Emergency Medical Technician) with airway endorsement:

- Establish advanced airway as needed

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

- Start IV with NORMAL SALINE/LACTATED RINGERS solution (en route)

### **EMT** (Emergency Medical Technician) with medication endorsement:

- If glucose < 60,
  - Adult** - consider GLUCAGON 1mg (IM/IN)

### SEIZURES continued

**AEMT** (Advanced Emergency Medical Technician):

Administer:

**Adult** - if glucose is < 60 or unable to determine glucose then administer THIAMINE 100 mg (IV/IM) then administer DEXTROSE 50% (50cc) (IV) OR DEXTROSE 10% (100cc) (IV); may repeat every 5 minutes to a max of 25g (250cc) for persistent hypoglycemia

**Pediatric** – Administer DEXTROSE 25%, 2cc/kg (IV/IO) over 2 minutes OR DEXTROSE 10%, 5cc/kg (IV, IO)

**Neonate**- (< 2 months) – administer 2cc/kg, D10W (IV)

**AEMT** (Advanced Emergency Medical Technician) with I99 endorsement

Attach monitor

**Adult** – DIAZEPAM (VALIUM) 2-10 mg (IV/IO/ET) OR MIDAZOLAM (VERSED) 1-5 mg (IV/IM/IN), OR LORAZEPAM (ATIVAN) 1-4 mg (IV/IM/IO)

For persistent or recurrent seizure activity, consult Medical Control for repeat doses. If unable to contact Medical Control above doses may be repeated x 1 in emergency situation.

**Pediatric** - MIDAZOLAM (VERSED) 0.2 mg/kg (IV/IM/IN) up to a max of 5 mg OR DIAZEPAM (VALIUM) 0.3 mg/kg up to a max of 10 mg (IV/ET/IO/Rectal) OR LORAZEPAM (ATIVAN) 0.05 mg/kg (IV/IO/IM) up to a max of 4 mg

If seizures are secondary to trauma or hypoxia, without hypoglycemia, do not give DEXTROSE

#### NOTES:

Do not attempt to insert tongue blade or other instruments in the mouth of a patient who is having a seizure  
Do not allow a crowd of onlookers to gather  
Patients in postictal state may appear lethargic, drift into sleep or have short memory loss or become violent  
They should be allowed to rest and should be reassured  
It may be helpful to reorient patients by telling them where they are, what happened, who you are etc.  
Protect the dignity of the patient during a seizure; discourage onlookers  
Patient may decline transport if they have a known history of seizures; experienced a single seizure and they are awake and appropriate at the scene  
Check clothing and personal belongings for medication, medical alert devices

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## STROKE

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

- Establish and protect airway
- Suction secretions as needed
- Administer high flow oxygen by non-rebreather mask
- Use pocket mask to assist ventilations as needed
- See [Altered Mental Status Protocol](#)

#### FOCUSED / DETAILED ASSESSMENT

- Obtain careful history including:
  - Onset of symptoms
  - Previous history of CVA
  - Seizure disorders
  - Diabetes, thyroid disease, hypertension
  - Any trauma
  - Any toxins like alcohol, carbon monoxide
- Obtain and record vital signs
- Complete and provide the facility a "Pre-hospital Stroke Screening Scale"

#### [Cincinnati Stroke Scale](#)

### **EMR** (Emergency Medical Responder) with monitoring endorsement:

- Determine glucose
- Adult - If glucose is < 60 and patient has control of their airway, consider oral GLUCOSE
- Do not delay transport for the administration of oral GLUCOSE

### **EMT** (Emergency Medical Technician):

- Do not elevate head during transport
- Rapid transport and early notification of receiving facility

### **EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

- Start a peripheral IV(s) as necessary, TKO with a NORMAL SALINE solution (en route)
- Avoid affected limbs when establishing IV(s) if possible

### **EMT** (Emergency Medical Technician) with medication endorsement:

- If glucose < 60,
  - Adult** - consider GLUCAGON 1mg (IM/IN)

### **AEMT** (Advanced Emergency Medical Technician):

- If glucose level is < 60:
  - Consider DEXTROSE 50% (IV) (50cc) OR DEXTROSE 10% (100cc) IV; May repeat every 5 minutes to a max of (250cc) for persistent hypoglycemia
  - If unable to initiate a peripheral IV and if glucose < 60, administer GLUCAGON 1mg (IM/IN)

## STROKE Continued

**AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

Attach monitor:

Identify rhythm and treat specific dysrhythmia; within scope of practice, according to the most recent ACLS protocols as directed by the medical director

### **NOTE:**

The following are the signs and symptoms suggestive of stroke, which should alert pre-hospital personnel for rapid evaluation and transport:

- Abrupt onset of hemiparesis or monoparesis (one-sided weakness)
- Sudden decline in level of consciousness
- Sudden severe headache
- Acute dysphagia or dysarthria
- Sudden loss of vision in one or both eyes or loss of vision in half of the visual field
- Double vision
- Ataxia
- Extremity weakness
- Loss of sensation in half of the body

### **Cincinnati Stroke Scale**

**Facial Droop** (have patient show teeth or smile)

- **Normal** – both sides of face move equally
- **Abnormal** – one side of face does not move as well as the other side

**Arm Drift** (patient closes eyes and holds arms straight out for 10 seconds)

- **Normal** – both arms move the same or both arms do not move at all (other findings, such as pronator grip, may be helpful)
- **Abnormal** – one arm does not move or one arm drifts down compared to the other

**Abnormal Speech** (have the patient say “you can’t teach an old dog new tricks”)

- **Normal** – patient uses correct words and no slurring
- **Abnormal** – patient slurs words, uses wrong words, or is unable to speak

Interpretation: If any 1 of the 3 signs is abnormal, the probability of a stroke is 72%.

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## SEXUAL ASSAULT

**EMR** (Emergency Medical Responder):

### INITIAL ASSESSMENT

Assess and treat for injuries

### FOCUSED /DETAILED ASSESSMENT

History

Identify mechanism of injury

Treat other injuries as indicated, see specific protocol

### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

Early notification of receiving facility

#### **NOTE:**

Protect the scene and preserve evidence in cooperation with law enforcement

Encourage the patient not to bathe, douche, brush teeth, or change clothes

This is a highly emotional and volatile situation; be sure your findings and treatment are clearly documented

Crew members of the same sex may relate better with the patient in the time of emotional crisis

Remember sexual assault is required to be reported to the proper authorities

Remember, the patient of a sexual assault is not always female

Place any clothing removed in a paper bag (do not use plastic)

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**NOTES**

# Flathead County Pre-Hospital Protocols

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## **SHOCK – MEDICAL**

For patients with adrenal insufficiency, on chronic steroid therapy or at risk of acute adrenal crisis in medical distress, see [Adrenal Insufficiency Protocol](#)

**EMR** (Emergency Medical Responder):

### INITIAL ASSESSMENT

- Administer high flow oxygen by non-rebreather mask
- Maintain body heat
- Assess bilateral breath sounds

### FOCUSED / DETAILED ASSESSMENT

- Take and record vital signs every five minutes
- Identify mechanism of injury or illness

### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

- Facilitate transport as soon as possible

**EMT** (Emergency Medical Technician) with airway endorsement:

- Utilize an advanced airway as needed

**EMT** (Emergency Medical Technician) with IV/IO initiation endorsement:

- Start (2) large bore IV(s) with NORMAL SALINE /LACTATED RINGERS solution (en route).

**Adult** - Administer a fluid challenge of 500 cc and reassess. May repeat X1, and then contact medical control

If you suspect "on-going blood loss", (INTERNAL or GI BLEED) maintain systolic blood pressures of 90 to 100 mmHg; higher blood pressures may increase bleeding

**Pediatric** - initial fluid bolus of 20cc/kg, repeat one time;  
Contact medical control

**AEMT** (Advanced Emergency Medical Technician with I99 Endorsement):

- Attach monitor

## **PARAMEDIC:**

If cardiogenic shock, NOT hemorrhagic or hypovolemic, then:

- Administer DOPAMINE infusion; start at 5 mcg/kg/minute and increase by 5 mcg/kg every 5 minutes to maintain systolic BP >100, do not exceed 25 mcg/kg per minute

If adult with suspected septic shock and persistent hypotension after aggressive fluid resuscitation, administer vasopressor.

### **SHOCK-MEDICAL Continued**

If adult with suspected septic shock and persistent hypotension after aggressive fluid resuscitation, administer vasopressor.

NOREPINEPHRINE infusion (preferred); start at initial dose 1 meg/min, titrate to effect. Max dose for refractory shock 20 meg/min.

OR

DOPAMINE infusion; start at 5 meg/kg and per/minute increase by 5 meg/kg every 5 minutes to maintain systolic BP > 100, do not exceed 25 meg/kg per minute

NOTE: Be vigilant for extravasation when administering NOREPINEPHRINE. Large vein IV or IO required

#### **NOTE:**

Attempt to determine the etiology of shock

Shock is indicated by a deteriorating trend of the following signs and symptoms:

- Restlessness and anxiety decrease in level of consciousness

- Capillary refill greater than 2 seconds

- Cool, clammy, pale skin

- Nausea and vomiting

- Cyanosis (periorbital, perioral, nail bed)

- Rapid shallow respiration greater than 24, progressing to slow, labored respirations

- Narrowing pulse pressure

Decrease in blood pressure is a LATE sign, tachycardia is an early indicator

The elderly, children, pregnant women, patients on drugs and athletes MAY NOT show early signs of shock, and may deteriorate quickly

"On-Going Blood Loss" could be from a trauma or a medical issue (GI bleed, etc.)

REMEMBER SEPTIC AND CARDIOGENIC SHOCK MAY REQUIRE AGGRESSIVE FLUID RESUSCITATION

Be vigilant for extravasation when administering NOREPINEPHRINE. Large vein IV Or IO required. (All "pressors" should be run through large vein IV or IO)

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## SMOKE INHALATION

### **EMR** (Emergency Medical Responder):

#### INITIAL ASSESSMENT

- Administer high flow oxygen by non-rebreather mask
- Use pocket mask AND assist respirations as needed
- Assess bilateral breath sounds
- Disability: LOC, AVPU, obtain Glasgow Coma Scale score
- Assess and treat for shock; see Shock-Medical Protocol
- Asses for burns; see Burns
- DO NOT DELAY TRANSPORT

#### FOCUSED / DETAILED ASSESSMENT

- Obtain pertinent medical

#### ADDITIONAL FIELD TREATMENT AND PREPARATION FOR TRANSPORT

- Smoke inhalation victims may be combative and require soft restraint

### **EMT** (Emergency Medical Technician)

- Use bag valve mask to assist ventilation, as needed, 100% oxygen
- Consider CPAP (not to exceed 10cm H2O)

### **EMT** (Emergency Medical Technician) with airway endorsement:

- Utilize an advanced airway as needed

### **EMT** (Emergency Medical Technician) with IV/IIO initiation endorsement:

- Start (2) large bore IV(s) with NORMAL SALINE /LACTATED RINGERS solution (en route).

**Adult** - Administer a fluid challenge of 500 cc, reassess and titrate fluids to a systolic blood pressure of 90 to 100 mmHg

**Pediatric** - initial fluid bolus of 20cc/kg, repeat one time, contact medical control

### **EMT** (Emergency Medical Technician) with medication endorsement:

- With distress, and marked wheezing or very decreased breath sounds bilaterally

**Adult** - Administer, ALBUTEROL 2.5mg mixed in 3cc of normal saline, NEBULIZED with oxygen or IPRATROPIUM 0.5mg mixed in 3cc of normal saline, NEBULIZED with oxygen or BOTH

**Pediatric** – Pediatric Respiratory Distress

### **AEMT** (Advanced Emergency Medical Technician):

- Consider CPAP (not to exceed 15cm H2O)

### **PARAMEDIC:**

- Patients exposed to fire and/or smoke in an enclosed area (structures, vehicles) with soot around or in nose or mouth, and Altered Mental Status

**Adult** - Administer Cyanokit 5g IV/IO (Cyanokit is incompatible with some drugs and needs its own IV/IO)

**Pediatric**- 70 mg/kg IV/IO

Do not delay transport due to Cyanokit administration.

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## **NOTES**

## Continuous Chest Compression CPR Guidelines

**\*\*Continuous Chest Compression (CCC) CPR Note:** The science of CPR/Resuscitation is constantly being updated and improved. The AHA standards for CPR and Resuscitation have been revised several times in the past to reflect the newest advances. **CCC-CPR** is a new CPR protocol that strives to eliminate any pause in chest compressions. There is compelling data currently available that indicates any unnecessary pause in chest compressions, including during patient ventilations or establishing an advanced airway, is detrimental to patient outcome. **Hi-Performance CPR (HP-CPR) is identical to CCC-CPR** but also stresses the importance of **CPR quality**, specifically maintaining the proper minimum CPR rate, as well as adequate depth and recoil during chest compressions. **The FCEMS Medical Director believes that Hi-Performance CPR provides potential benefits to cardiac arrest patients and prefers that this protocol be followed during the resuscitation of cardiac arrest patients.** FCEMS has currently trained all county EMS agencies in Hi-Performance CPR. EMS providers that have not been trained or are not comfortable with Hi-Performance CPR may default to the current AHA standards as long as their current Medical Advisor has permission from the FCEMS Medical Director for them to do so. **Note:** These protocols are for the adult only, follow standard AHA standards for neonates, infants and children.

### General Guidelines for Management of BLS Cardiac Arrest for an Adult

#### Cardiac Arrest BEFORE arrival of ALS Personnel

- BLS Units are responsible for the management of CPR Cycles.
  - Limit all pauses to < 10 seconds whenever possible.
1. **IMMEDIATELY** verify cardiac arrest
    - Unconscious/Unresponsive
    - No Carotid Pulse
    - No “normal” respirations (Ignore agonal respirations)
  2. **Designated Compression Person**
    - Begin 2 minutes continuous chest compressions at 100+ / Minute

#### **Do NOT interrupt chest compressions**

3. **Designated AED Person**
  - TURN ON AED as soon as cardiac arrest has been verified.
  - Cut clothing as necessary and place patches
    - One patch under the right clavicle
    - One patch just below the left nipple line on the chest wall

#### **Do NOT interrupt chest compressions**

4. **Designated Ventilation Person** – (When Available)
  - Begin ventilations at approximately 10 per minute (1 breath every 10 compressions)
  - **Insert Oral or Nasal adjuncts, and suction as needed.**

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- Attempt to place advanced airway, either King, or ETT, if in your scope of practice, after 6 min (End of 3<sup>rd</sup> CPR cycle)—Can be done sooner if enough personnel is available.

### Do NOT interrupt Chest Compressions

#### 5. Designated IV Person – (When Available)

- Prepare the patient for IV Placement
- Begin to assemble the IV set

### Dec 2011 Standing Orders for Cardiac Arrest

Shock Management	
BLS	ALS
<p><b>DO 2 MINUTES OF CPR</b></p> <ul style="list-style-type: none"><li>• Stop &amp; Push ANALYZE &amp;</li><li>• Change Chest Compression Person during analysis</li><li>• Upon “Shock Advised” <u>Perform 30 compressions while machine charges</u></li><li>• Pause briefly, clear patient, &amp; PUSH TO SHOCK</li><li>• Resume Chest Compressions</li></ul> <p><b>Repeat Cycle</b></p>	<ul style="list-style-type: none"><li>• <b>2 MINUTES OF CPR</b></li><li>• STOP &amp; ANALYZE Rhythm</li><li>• Change Chest Compression Person during analysis</li><li>• If Rhythm is shockable: Advise compressor to begin 30 compressions.</li><li>• Charge Monitor/Defibrillator during those 30 compressions</li><li>• Stop Compressions, clear victim &amp; Deliver SHOCK</li><li>• Resume Chest Compressions</li></ul> <p><b>Repeat Cycle</b></p>



### NOTES:

- **Continuous Chest Compressions**
- **Ventilations:** *1 Breath w/ BVM every 10 Compressions, insert OPA, NPA, or King Airway, ASAP (if in your scope of practice)*
- **On ALS Arrival-** *Continue CPR until ALS Personnel are ready to Change/Analyze/Shock with Monitor/Defibrillator*
- **2 MINUTES OF CPR INITIALLY** *is minimum not a maximum*
- **If ongoing interventions or ALS directs—***extend CPR cycle until ready to analyze.*
- **If Patient arrests in presence of EMS, Shock First**
- **If ROSC is achieved in a V-fib arrest, initiate Pre-Hospital Therapeutic Hypothermia**

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[Return to Arrest Cardiac - Adult](#)

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## **Pre-Hospital Therapeutic Hypothermia**

### **V-Fib Arrest only**

**To be used for CPR patients who have ROSC (return to spontaneous circulation) and are a v-fib arrest:**

1. Expose patient by removing clothing
2. Turn on Air Conditioning
3. Apply ice packs to patient's groin and axillary regions
4. Infuse 20cc/kg cool saline, (4 C or 39.2 F is ideal, if available)
  - a. Anything cooler than patient's body temp but above 4 C or 39.2 F is beneficial

### **Paramedic & AEMT with I99**

If shivering occurs, consider:

**Adult** –MIDAZOLAM (VERSED) 1-2MG or FENTANYL 25-50MCG

**Pediatrics** - (contact medical control for pediatric dose)

[Return to Appendix Specific Protocols](#)

[Return to Arrest Cardiac - Adult](#)

## **Tourniquet Guidelines**

### **Tourniquets:**

#### **Clinical Indications:**

1. Life threatening extremity hemorrhage that cannot be controlled by other means.
2. Serious or life threatening extremity hemorrhage and tactical considerations prevent the use of standard hemorrhage control techniques.

#### **Contraindications:**

1. Non-extremity hemorrhage
2. Proximal extremity location where tourniquet application is not practical

#### **Procedure:**

1. Place tourniquet proximal to wound
2. Tighten per manufacturer instructions until hemorrhage stops and/or distal pulses in affected extremity disappear.
3. Secure tourniquet per manufacturer instructions
4. Note time of tourniquet application and communicate this to receiving care providers
5. Dress wounds per standard wound care protocol
6. If delayed or prolonged transport and tourniquet application time > 45 minutes: consider reattempting standard hemorrhage control techniques and removing tourniquet

[Return to Bleeding Control External](#)

[Return to Appendix Specific Protocols](#)

## **Tranexamic Acid Protocol**

**Pharmacology and Actions:** Tranexamic Acid (TXA) is a **potent anti-fibrinolytic drug**. The main action is blocking of the lysine-binding sites of the plasminogen molecule. This prevents activation of plasminogen by plasminogen activator. Three large controlled studies have shown increased survival of trauma patients receiving TXA. **Beneficial effect is improved the earlier the drug is given. There has been no documented increase in thrombotic or thromboembolic events associated with use of TXA.**

### **Guidelines:**

**TXA should not be administered until after the initial resuscitation of the patient. Focus** should always be on **ABC's and Rapid Transport**. Fluids should be given initially to support the BP. A 2<sup>nd</sup> IV may be necessary to administer TXA

### **Indications:**

**Age >= 16 years or weight > 100lbs (45kg) AND**

Trauma with suspected hemorrhagic shock (SBP <90) **(Standing Protocol)**

Trauma patients with suspected severe visceral (ie internal Thoracic / Abdominal) hemorrhage, (SBP>90) and Transport >15min **(Med Control Only)**

### **Excluded Patients:**

**Isolated head injury and/or Spinal Shock without associated visceral hemorrhage**

There is no known adverse effect of TXA in these patients but since the therapeutic effect has not yet been proven they are excluded. **Patient with head injury and spinal shock with suspected visceral hemorrhage should receive TXA**

### **Contraindications:**

**Time since injury > 3 hours**

**Known clot physiology – MI, PE, DVT, CVA (<30 days)**

**If you are unable to determine if the patient has had a major thrombotic event within past 30 days you should give the drug.**

### **Dosage and Administration:**

**TXA Bolus (IV/IO): Infuse 1gm in 100ml (NS or LR) over 10 minutes**

( Currently supplied as 1gm in 10ml Vials by KRMC, ( When added to a 100ml bag of normal saline, this would be 10-11 drops every 10 seconds in a 10 drop set ).

### **Special Considerations:**

TXA may be started pre-hospital and if the dose is not yet completely finished it will be completed in the ED. TXA should not be administered to anyone who has had an known allergic reaction to TXA.

[Return to Multiple Trauma](#)

## **CPAP (Continuous Positive Airway Pressure)**

NOTE: This is an EMT/with Airway Endorsement to Paramedic level protocol

### **INDICATIONS**

1. Any patient who is in respiratory distress with signs and symptoms consistent with asthma, COPD, Pulmonary Edema, CHF, or pneumonia AND who:
  - a. Is awake and able to follow commands
  - b. Is over 12 years old and is able to fit the CPAP mask
  - c. Has the ability to maintain an open airway
2. AND who exhibits two or more of the following:
  - a. A respiratory rate greater than 25 breaths per minute
  - b. Pulse Oximetry of less than 90% at any time
  - c. Use of accessory muscles during respirations

### **CONTRAINDICATIONS**

1. Patient does not have adequate spontaneous respiratory effort.
2. Patient unable to follow commands.
3. Patient unable to protect airway or active vomiting.
4. Systolic blood pressure < 90 mmHg
5. Respiratory distress secondary to trauma or suspected pneumothorax.

### **PROTOCOL**

1. CPAP is a standing order for providers at or above the EMT level who have received device specific training.
2. Utilize CPAP where indicated in the Respiratory Distress protocol
  - a. Note that CPAP does not take the place of pharmacology
  - b. Note that although CPAP is listed in the protocol in a linear list, it need not be interpreted that all interventions must be completed in the written order. Providers should use good clinical judgment to determine at what point in the course of the various therapies CPAP should be initiated.
3. CPAP settings
  - a. 5 cm H<sub>2</sub>O for mild distress
  - b. 5 cm H<sub>2</sub>O for moderate or severe distress when systolic BP 90-100 (observe closely for BP change)
  - c. 10 cm H<sub>2</sub>O for moderate to severe distress
  - d. 15 cm H<sub>2</sub>O for severe distress (AEMT and above)
4. Continue constant aggressive airway evaluation and control.
  - a. Not all patients will improve
  - b. Providers must be prepared to discontinue CPAP and initiate more aggressive steps in decompensating patients.

# Flathead County Pre-Hospital Protocols

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**\*\*BE ALERT\*\*** for circumstances in which the patient continues to deteriorate despite CPAP and/or medicative therapy, terminate CPAP administration and perform BVM ventilation and/or endotracheal intubation if necessary.

5. Claustrophobia is a common complaint with CPAP masks
  - a. It is recommended that in the case of a claustrophobic patient, they be allowed to hold the mask and remove it if necessary. It is common that as the benefits are felt, patients will be inclined to keep the mask on their face. Straps can then be attached as the patient becomes more comfortable
  - b. Note that some patients will not tolerate the mask and should not be forced.
6. Reassess, Reassess, Reassess
  - a. Slowing respirations do not necessarily indicate improvement
  - b. Be cognizant of hypotension.
  - c. Be aware for need for more aggressive airway interventions if the patient shows signs of further respiratory decompensation.
7. Contact medical control to alert them of CPAP use and to ensure receiving facility preparedness to continue treatment.

## **POTENTIAL COMPLICATIONS**

1. Continued decompensation in respiratory status.
2. Decrease in blood pressure.
3. Panic or anxiety from claustrophobia.
4. Gastric distension
5. Pneumothorax
6. Exhaustion of oxygen supplies.

[Return to Dyspnea - Adult](#)

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## Trauma Alert Criteria

**All \*\* Criteria will be transported to KRMCC**

### FULL TRAUMA ALERT CRITERIA

- a. \*\*Respiratory compromise/obstruction/or intubation in a patient who is not transferred from another facility. (Rate<10 or >29, <20 in infant aged <1 year)
- b. \*\*Confirmed blood pressure <90 at any time in adults or age-specific hypotension in children.
- c. \*\*[GCS](#) <10 with mechanism attributed to trauma.
- d. \*\*Significant penetrating injury to head, neck, torso, groin or proximal to the elbow or knee.
- e. \*\*Amputation above wrist or ankle.
- f. \*\*Transfer patients from other hospitals receiving blood to maintain vital signs.
- g. \*\*Emergency physician's direction.

### MODIFIED TRAUMA ALERT CRITERIA

1. \*\*Glasgow coma score < 13 with mechanism attributed to trauma
2. \*\*Paralysis.
3. \*\*Chest wall instability or deformity (e.g. fail chest)
4. \*\*Two or more proximal long-bone fractures
5. \*\*Crushed, degloved, mangled, or pulseless extremity
6. \*\*Pelvic Fractures with instability
7. \*\*Open or depressed skull fractures
8. \*\*Major Burns > than 20% BSA, and/or Inhalation injuries
9. \*\*Hypothermia with a GCS < 13
10. Death of an occupant in the same car.
11. Partial or complete ejection from an enclosed vehicle.
12. Fall >15 feet or 3 times patients height adult, 2-3 times for pediatrics
13. Rollover MVA with high suspicion of injuries
14. Pedestrian/bicyclist VS auto hit >10 mph or thrown >15 ft.
15. Extrication time >20 min. with suspected injuries
16. Significant intrusion into occupant space of the vehicle. (>12 inches)
17. Intubated interfacility trauma transfers that do not meet other FTA criteria.
18. Field/hospital personnel suspect significant injuries to the patient without any of the above criteria being met.

### HIGH ENERGY TRANSFER SITUATIONS/ CO-MORBID FACTORS THAT MAY WARRANT TRAUMA TEAM ACTIVATION BY EMS PROVIDERS OR MEDICAL CONTROL

1. Motorcycle >20 mph, ATV or bicycle crash
2. Extremes of age <15 or >55
3. Pregnancy >20 weeks
4. Presence of intoxicants
5. Pre-existing medical illness (COPD, renal failure, anticoagulation therapy)
6. Time sensitive injuries (crush injuries, vascular compromise to extremities)

[Return to Multiple Trauma](#)

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## Refusal Policy

Prior to termination of the healthcare professional/patient relationship, all of the following items will be evaluated and specifically documented on the Patient Care Report.

1. Physical examination performed including full set of vital signs (i.e. complete blood pressure, pulse, respiratory rate) or the patient's refusal of consent to an examination  
Document vital signs on PCR.
2. History of event and prior medical history, including medications, obtained.
3. Patient or decision-maker determined to be capable of refusing medical treatment or transportation. If the patient is a minor or incompetent adult, assure that a legal guardian or person able to make healthcare decisions for the individual is refusing care.
4. Risks of refusal of medical treatment and transportation explained to patient or responsible party, and documented.
5. Benefits of medical treatment and transportation explained.
6. Patient clearly offered medical treatment and transportation.
7. Refusal of Care Form prepared, explained, signed, and witnessed.
8. Patient confirmed to have a meaningful understanding of the risks and benefits involved in this healthcare decision.
9. Patient advised to seek medical attention for complaint(s).
10. Patient advised to call 911 for medical assistance if condition continues or worsens.

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# Flathead County Pre-Hospital Protocols

## Drugs that Prolong QT and/or Cause Torsades De Pointes TdP

Generic Name	Brand Name	Generic Name	Brand Name
Amiodarone	Cordarone	Oxytocin	Pitocin
Amiodarone	Pacerone	Pentamidine	NebuPent
Arsenic trioxide	Trisenox	Pentamidine	Pentam
Astemizole	Hismanal	Pimozide	Orap
Azithromycin	Zithromax	Probucol	Lorelco
Bepriidil	Vascor	Procainamide	Procan
Chloroquine	Aralen	Procainamide	Pronestyl
Chlorpromazine	Thorazine	Quetiapine	Seroquel
Cisapride	Propulsid	Quinidine	Cardioquin
Citalopram	Celexa	Quinidine	Quinaglute
Clarithromycin	Biaxin	Risperidone	Pisperdal
Diphenhydramine	Benadryl	Sertaline	Zoloft
Disopyramide	Norpace	Sevoflurane	Sojourn
Dofetilide	Tikosyn	Sevoflurane	Ulane
Domperidone	Motilium	Solifenacin	VESicare
Droperidol	Inapsine	Sotalol	Betapace
Erthromycin	E.E.S	Sparfloxacin	Zagam
Erythromycin	Erythrocin	Terfenadine	Seldane
Escitalopram	Ciprallex	Thioridazine	Mellaril
Escitalopram	Lexapro	Trazodone	Desyrel
Famotidine	Pepcid	Trimethoprim-Sulfa	Septra
Flecainide	Tambocor	Vadetanib	Caprelsa
Fluoxetine	Prozac	Vandetanib	Caprelsa
Furosemide	Lasix	Vardenafil	Levetra
Halofantrine	Halfan	Venlafaxine	Effexor
Haloperidol	Haldol		
Hydrochlorothiazide	Apo-Hydro		
Ibutilide	Corvert		
Levofloxacin	Levaquin		
Levomethadyl	Orlaam		
Mesoridazine	Serentil		
Methadone	Dolophine		
Methadone	Methadose		
Methadone	Dolophine		
Moxifloxacin	Avelox		
Ondansetron	Zofran		

Alphabetized by  
Generic Name

# Flathead County Pre-Hospital Protocols

## Drugs that Prolong QT and/or Cause Torsades De Pointes TdP

Brand Name	Generic Name	Brand Name	Generic Name
Apo-Hydro	Hydrochlorothiazide	Pacerone	Amiodarone
Aralen	Chloroquine	Pentam	Pentamidine
Avelox	Moxifloxacin	Pepcid	Famotidine
Benadryl	Diphenhydramine	Pisperdal	Risperidone
Betapace	Sotalol	Pitocin	Oxytocin
Biaxin	Clarithromycin	Procan	Procainamide
Caprelsa	Vadetanib	Pronestyl	Procainamide
Caprelsa	Vandetanib	Propulsid	Cisapride
Cardioquin	Quinidine	Prozac	Fluoxetine
Celexa	Citalopram	Quinaglute	Quinidine
Cipralox	Escitalopram	Seldane	Terfenadine
Cordarone	Amiodarone	Septra	Trimethoprim-Sulfa
Corvert	Ibutilide	Serentil	Mesoridazine
Desyrel	Trazodone	Seroquel	Quetiapine
Dolophine	Methadone	Sojourn	Sevoflurane
Dolophine	Methadone	Tambocor	Flecainide
E.E.S	Erythromycin	Thorazine	Chlorpromazine
Effexor	Venlafaxine	Tikosyn	Dofetilide
Erythrocin	Erythromycin	Trisenox	Arsenic trioxide
Haldol	Haloperidol	Ulane	Sevoflurane
Halfan	Halofantrine	Vascor	Bepidil
Hismanal	Astemizole	VESicare	Solifenacin
Inapsine	Droperidol	Zagam	Sparfloxacin
Lasix	Furosemide	Zithromax	Azithromycin
Levaquin	Levofloxacin	Zofran	Ondansetron
Levetra	Vardenafil	Zoloft	Sertaline
Lexapro	Escitalopram	Alphabetized by Brand Name	
Lorelco	Probuco		
Mellaril	Thioridazine		
Methadose	Methadone		
Motilium	Domperidone		
NebuPent	Pentamidine		
Norpace	Disopyramide		
Orap	Pimozide		
Orlaam	Levomethadyl		

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## Glasgow Coma Scale

The Glasgow Coma Scale provides a score in the range 3-15; patients with scores of 3-8 are usually said to be in a coma. The total score is the sum of the scores in three categories. For adults the scores are as follows:

<b>Eye Opening Response</b>	Spontaneous--open with blinking at baseline	4 points
	Opens to verbal command, speech, or shout	3 points
	Opens to pain, not applied to face	2 points
	None	1 point
<b>Verbal Response</b>	Oriented	5 points
	Confused conversation, but able to answer questions	4 points
	Inappropriate responses, words discernible	3 points
	Incomprehensible speech	2 points
	None	1 point
<b>Motor Response</b>	Obeys commands for movement	6 points
	Purposeful movement to painful stimulus	5 points
	Withdraws from pain	4 points
	Abnormal (spastic) flexion, decorticate posture	3 points
	Extensor (rigid) response, decerebrate posture	2 points
	None	1 point

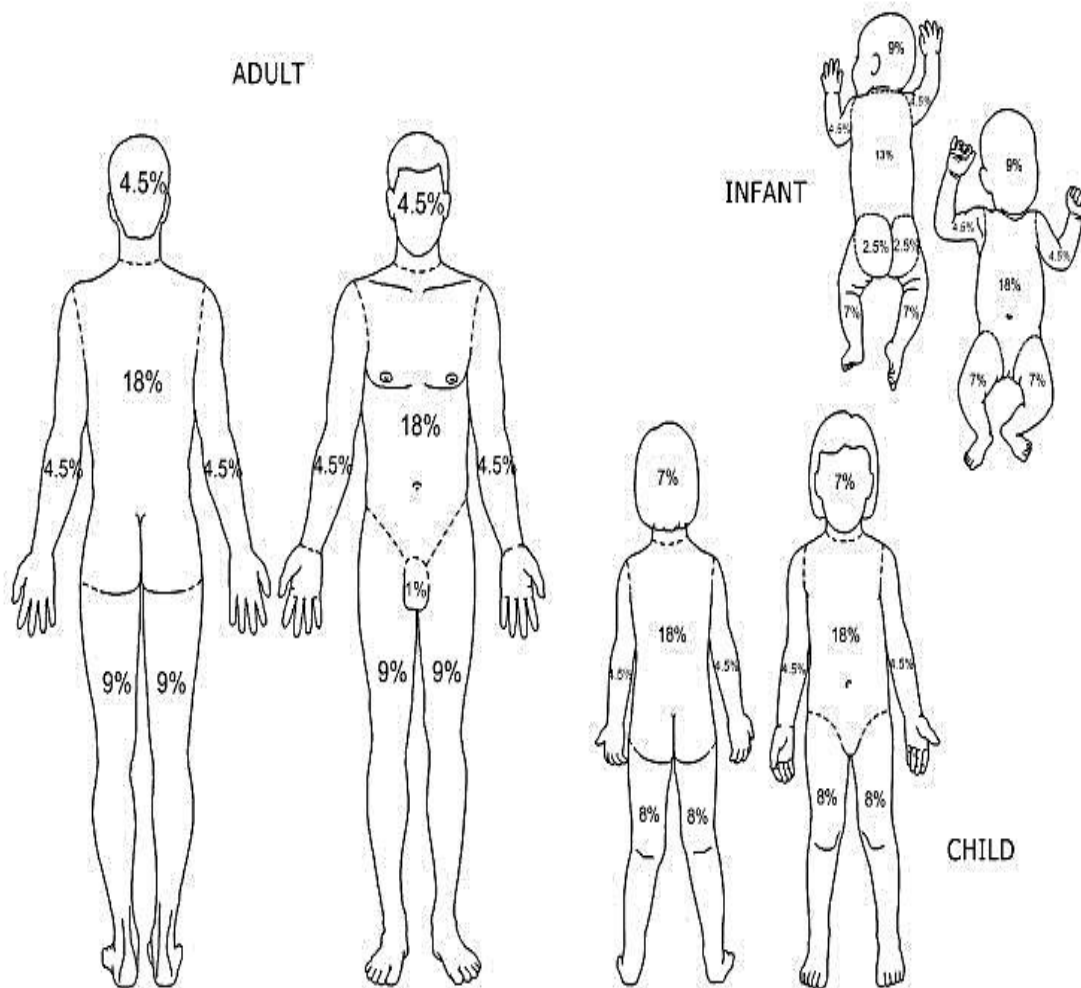
For children under 5, the verbal response criteria are adjusted as follow

SCORE	2 to 5 YRS	0 TO 23 Mos.
5	Appropriate words or phrases	Smiles or coos appropriately
4	Inappropriate words	Cries and consolable
3	Persistent cries and/or screams	Persistent inappropriate crying &/or screaming
2	Grunts	Grunts or is agitated or restless
1	No response	No response

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## Rule of Nines

Rule of Nines



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## Parkland Burn Formula

$$\frac{\% \text{ Burn Area} \times \text{Patient Weight in kg}}{4} = \text{mL/hr}$$

[Return to Burns \(Chemical/Thermal/Electrical\)](#)

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## Cincinnati Stroke Scale

**Facial Droop** (have patient show teeth or smile)

- **Normal** – both sides of face move equally
- **Abnormal** – one side of face does not move as well as the other side

**Arm Drift** (patient closes eyes and holds arms straight out for 10 seconds)

- **Normal** – both arms move the same or both arms do not move at all (other findings, such as pronator grip, may be helpful)
- **Abnormal** – one arm does not move or one arm drifts down compared to the other

**Abnormal Speech** (have the patient say “you can’t teach an old dog new tricks”)

- **Normal** – patient uses correct words and no slurring
- **Abnormal** – patient slurs words, uses wrong words, or is unable to speak

Interpretation: If any 1 of the 3 signs is abnormal, the probability of a stroke is 72%.

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**NOTES**

## **Ketamine Drug Information**

Ketamine has been approved by the Montana BOME for pre-hospital use by EMT-P's as an adjuvant for pain control. The following information will serve to educate EMS personnel about Ketamine so that they best can utilize it to improve the care of our patients.

### **Classification**

General Anesthetic- causes reversible loss of sensation

Dissociative agent- distorts perception of sight and sound, produce feelings of detachment

Analgesic- reduce feeling or perception of pain without loss of sensation

### **Dosing/Administration**

May be given IV/IM/PO. Currently approved for IV use only in pre-hospital setting

Onset of Action: 30-120sec IV, 2-5min IM, 15-30min PO

Duration of Action: 15min IV, 30min IM and 60min PO

Dosing: Analgesia (sub-dissociative): 0.1-0.25mg/kg IV up to 0.5mg/kg  
(only approved EMS dosing)

Sedation: (dissociative) 1-2mg/kg IV, 2-5mg IM, 6-10mg/kg PO

### **Advantages**

Rapid Onset/Short Duration

Synergistic with narcotic analgesics

Effective in narcotic tolerant patient

Can use in hypotensive patient

Respiratory depression uncommon

Accidental Overdose (10-100x) not associated with long-term morbidity

### **Adverse Reactions (Major or Common)**

'Emergence'- Vivid dreams, hallucinations, delirium (treat with benzodiazepine)

Hypertension- drug causes catecholamine release

Allergic Reactions- hypersensitivity (like any other drug)

Potential for Abuse- DEA Class III (same as hydrocodone)

### **Adverse Reactions (Minor or Uncommon)**

Laryngospasm- can be managed with bagging

Hypersalivation- usually not a problem, can be managed with ATROPINE 0.5mg IV

Muscle Hypertonia- rarely an issue, can use benzodiazepine if necessary

Cardiac Arrhythmia- tachycardia (catecholamine release), rarely bradycardia

### **Contraindications**

Any condition where increased BP would be a problem: hypertensive crisis, amphetamine abuse, acute pulmonary edema

Known Hypersensitivity

### **Precautions**

Tachycardia

CAD (Coronary Artery Disease)

Increased ICP: Ketamine can raise ICP but also found to have 'neuroprotective' effect. Can be used in head trauma but avoid in known cases of increased ICP

### **Observations**

Nystagmus- almost universal, especially at dissociative doses

Blank Stare with no verbal response

Bronchodilation: Useful during induction of anesthesia, off-label Rx for asthmatic crisis

### **Summary**

Adults/ Children 5 or older

May repeat x1 **ONLY with online medical control**

Consider 1<sup>st</sup> line in hypotensive patient

Be prepared for emergence (VERSED, ATIVAN)

Helpful in narcotic tolerant patient

Ambu-bag if laryngospasm

Expect future changes in dosing and administration (IM use, higher dosing) once experience is gained

Not yet approved for chemical sedation but would be useful

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## Medical Director Statement on Spinal Immobilization

The widespread established pre-hospital protocol of fixed spinal immobilization of all patients with potential axial spine injuries using a cervical collar, tape or other head fixation device along with a rigid backboard has come under increasing scrutiny in the past five years. The main issues involved in this review are:

- A. Do current established methods of spinal immobilization actually limit or prevent spinal cord injury during extrication and transport?
- B. Do current spinal immobilization practices actually cause harm to our patients and if so, is there a way to minimize this problem by either altering our techniques to minimize injury/discomfort or better select our patient population that absolutely require fixed spinal immobilization?

Unfortunately, the answer to the first question above is not known. There are no established studies using EMS patients that demonstrate the benefit of rigid spinal immobilization using a backboard in limiting injury or improving outcomes in patients with serious/disabling axial spine injuries. The evidence for our current practices is based on laboratory studies using animals and experimental models that suggest potential rotatory and lateral instability of the cervical spine with use of a cervical collar alone. There is a growing body of evidence, however, indicating that patients with potential and actual cervical spine injuries are adequately protected by techniques utilizing a cervical collar with the patient firmly secured to a stretcher. The main factors contributing to this growing consensus are that cognitively intact patients with cervical spine injuries do a good job of protecting themselves (they don't push through the pain) and that the great majority of severe unstable injuries have already resulted in spinal injury prior to EMS intervention. The patients with unstable injuries will almost always have neurological deficits, can be readily identified and treated with rigid spinal precautions that **possibly** might prevent further injury.

There are two exceptions to the above tenant that selective immobilization using a cervical collar alone is adequate for most patients. **Altered** patients (intoxication, head injury, etc.) cannot be relied upon to assist in maintaining immobilization by remaining still while in a collar alone. Also, if GCS is low, the EMS responder may not be able to determine if a neurologic deficit is present. Altered patients with potential cervical spine injury will always require rigid immobilization using a backboard. Patients with major **distracting** injuries (long bone fractures, multiple injuries) may not be aware of neck or other axial spine injury or may not be able to remain immobile due to severe distress. Many, but not all, patients with distracting injuries will require rigid immobilization.

## Flathead County Pre-Hospital Protocols

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The question of whether current widespread practices utilizing a backboard for rigid spinal immobilization cause patient morbidity is clear. Every EMS provider, ED nurse and ER physician has heard patients complain about how uncomfortable they are. Patients spend thousands of hours daily fixed to spine boards during transport to hospitals, between hospitals and awaiting treatment in ER's. Backboards are responsible for causing actual injuries ranging from pressure necrosis of skin to axial spine injuries in patients with pre-existing problems such as scoliosis (kyphosis common in elderly). Furthermore, by forcing patients to lay flat backboards can and do exacerbate other patient conditions or injuries. Patients with respiratory compromise elevated ICP or at risk for aspiration are just three of many potential scenarios where backboards can create potentially life-threatening complications. It is clear that limiting use of backboards, both by selecting only patients that potentially could benefit from their use, as well as limiting the amount of time patients spend on backboards should be a priority. Backboards should be viewed as a tool to be used primarily for extrication of patients. Backboards are not stretchers and are necessary for transport only for the subset of patients identified in this paper and the current Flathead County EMS Head/Neck Injury Protocol.

A special note about spinal immobilization during extrication. In patients with severe, potentially life-threatening injuries, rapid extrication and transport is always a priority. In such patients, manual spinal immobilization is likely much quicker and thus preferred to employing devices such as KED Vests and short boards. The same tenants about spinal immobilization in altered patients and patients with major distracting injuries apply but in most instances manual immobilization with a collar if it can be fitted is preferable to delaying transport by prolonging extrication using specialized extrication devices. Once the patient is extricated, he can be immobilized on a longboard if required. Patients with neurologic deficits who are otherwise stable (awake, adequate BP, no respiratory compromise) should be extricated using every device or technique available.

In summary, the following patients will always require rigid immobilization using a backboard:

- 1. Patients with Altered Mental Status and suspected head/neck injury or significant mechanism for spinal injury**
- 2. Patients with neurologic deficits and mechanism of injury due to trauma**

The following patients should always be considered for rigid immobilization:

**Patients with major distracting injuries (long bone fractures, multiple injuries) who have significant mechanism for cervical spine injury. If concern for injury is heightened by any cervical spine tenderness or any complaints of neck pain, such patients should have rigid immobilization.**

[Return to Head/Neck Spine Injuries](#)

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## Flathead County Controlled Substances Protocol

All substances listed in 21 USC 812 titled *Schedules of Controlled Substances* are considered controlled substances by the Drug Enforcement Administration (DEA) and are recognized as such by the Flathead County Medical Director. All substances listed as Schedule II drugs are subject to a higher standard for usage and control and fall directly under the Drug Enforcement Administration's license issued to the County Medical Director. Failure to exercise the controls required by the DEA could result in the loss of the Medical Director's DEA license (affecting his ability to practice medicine). In addition anyone authorized to acquire, dispense or store controlled substances at the Medical Director's direction is subject to suffer civil and criminal repercussions relative to violations of DEA rules and standards. It is for this reason that the following Protocols are established.

Schedule II substances (medications) currently authorized are: Fentanyl and Morphine.

Acquisition of Schedule II medications shall be on the forms and in the manner prescribed by the Medical Director in accordance with current DEA requirements. Each geographic facility or location authorized for the storage of Schedule II medications by the Medical Director shall possess a current site license/registration number issued by the DEA for that location.

Each facility shall document the receipt of, storage of and distribution of Schedule II medications on the forms and in the manner prescribed by the Medical Director. This includes, but is not limited to all dated or expired medications and "wasted" medications. ( A "waste" is described as any portion of a medication remaining after a therapeutic dose has been given in accordance with established Protocols or at the direction of online Medical Control from a manufacturer designated unit container who's seal is broken or altered,). All expired medications are to be "wasted" in accordance with these Protocols.

The Medical Director may cause audits of controlled substances and their associated documents at any time. Any agency in possession of a DEA site license/registration under the DEA number of the Medical Director shall give complete cooperation to the designated auditor and assist in this process. These audits are intended to insure compliance with DEA rules and regulations to the protection of the Medical Director's DEA license and should provide the agency with a training/learning tool to insure best practice relative to controlled substances. (Refer to DEA's Practitioner's Manual section III for direction).

The Medical Director will not issue specific direction or orders for how and where agencies store Schedule II medications as long as they meet the base standards for security established by the DEA. It is suggested that numbered, individually unique integrity tags be used in fleet controls to provide integrity with greater ease for day to day operations. (This is the current standard for most agencies at this time). If during an audit the agency's security measures are found to be inadequate or not within DEA compliance standards, then the agency will be notified that immediate corrective action is needed.

# Flathead County Pre-Hospital Protocols

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## Procedures for DEA form 222 and acquisition of Schedule II controlled substances

- Each site license/registration issued by the DEA under the DEA license of the Medical Director will be issued DEA form 222 copies by the DEA for each site. These forms are numbered, site specific and accountable. Any “voided” form must be retained and handled in accordance with DEA rules.
- The designated agency personnel responsible for ordering Schedule II controlled substances shall complete the form 222 as prescribed by the DEA.
- Each agency should seek to back stock only the quantity of Schedule II medications that they feel will meet their immediate needs so as to keep back stock reasonable to deter any unlawful diversion.
- Completed 222 forms should be given to the Medical Director’s designated agent for review and processing. These forms may be dropped off 24/7 at the OES offices for the EMS Manager. A copy will be produced and retained for the Medical Director at that time.
- Once reviewed, the form 222 will be signed by the Medical Director or his agent and conveyed to the pharmacist at either Kalispell Regional Medical Center or North Valley Hospital for fulfillment. Notice will be given to the agency that the form 222 was submitted and the medication may be retrieved as described below.
- The KRMC pharmacy has requested that form 222 orders be picked up by the agencies Mon-Tue-Wed during normal business hours. NVH will accept the forms during their normal business hours. (They request at minimum of 24Hr turn-a-round time). This should not be problematic as these orders are for back stock and made with plenty of lead time so as not to place any agency in a shortage.
- Copies of DEA form 222 shall be retained by the agencies for a period no less than three years.
- Records of Schedule II controlled substances that are obtained, retained, administered or wasted shall be completed on the forms provided by the Medical Director. Such records shall be maintained separately and independent of all other medication records. These Schedule II records shall be immediately available to any DEA agent or the auditor designated by the Medical Director.
- It is the desire of the Medical Director that all “wasted” medications occur at the Emergency Rooms of either North Valley Hospital or Kalispell Regional Medical Center, and witnessed by ER staff and not another member of the agency conducting the waste. If not possible or practical give an explanation of the circumstances and note in the log, then another member of the same agency may witness the waste.

## **USE OF PATIENT RESTRAINTS**

### **(Managing Assaultive or Dangerous Behavior)**

**EMR** (Emergency Medical Responder):

#### **INITIAL ASSESSMENT**

Protect yourself and others first. Have enough personnel resource to achieve control with safety.

#### **FOCUSED / DETAILED ASSESSMENT**

Obtain history to the best of your ability given the circumstances including :

Prescription and non-prescription drugs (social or illicit drugs)  
Underlying organic cause, i.e. brain tumor, hypoglycemia, etc  
Underlying traumatic cause, i.e. head injury

#### **IF PATIENT IS AN IMMEDIATE THREAT TO THEMSELVES OR RESPONDERS**

Remove yourself from danger and request Law Enforcement Assistance.

If the circumstances present and clear and present danger to the patient or others were awaiting law enforcement response is not possible or practical then restraint of the patient is necessary.

#### **APPLICATION OF RESTRAINTS**

- Restraints shall be applied in such a manner that they do not cause vascular, neurological or respiratory compromise.
- Restraint devices applied must be either padded hard restraints or soft restraints. Either must allow for a “quick” release and not be subject to a “key” or other remote device to remove.
- At no time shall EMS personnel use hard plastic ties ( such as LE “flex cuffs” or electrical ties ).
- At no time shall EMS personnel restrain a patient with their hands and feet behind their back.

## Flathead County Pre-Hospital Protocols

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- At no time shall EMS personnel restrain a patient between two hard objects such as between two back boards.
- At no time shall EMS personnel restrain a patient in a prone position unless for a medical necessity, such as when a patient has an impaled object in the back. Patients should be transported either supine or left lateral recumbent.
- EMS personnel will evaluate the patient's pulse quality, capillary refill, color, temperature, nerve and motor function immediately following the application of restraints and each 15 minutes thereafter until removed at the receiving facility.
- EMS personnel must apply restraints and transport the patient in such a manner that allows the patient to straighten the abdomen and provide full chest rise for full breaths.
- If a law enforcement officer has taken a person into custody and requests the assistance of EMS personnel in the transport of such person this is permitted in these protocols with the following restrictions : ( Persons under arrest ).

NOTE : If the person in custody is hand cuffed with hard standard LE hand cuffs then the LE Officer MUST accompany the EMS crew in the ambulance. If cuffed with hands behind the back, the person must be transported "left lateral recumbent".

- If the LE Officer wishes, they may assist the EMS crew in transitioning the restraints from hard LE restraints to EMS compliant soft restraints. The officer may then follow the EMS crew to the receiving facility noting that should the EMS crew need assistance with the LE person in custody the LE officer can immediately intervene and assist.

### **EMR (Emergency Medical Responder ) with **Monitoring Endorsement****

Determine glucose - Adult patient: If glucose is <60 and patient has control of their airway consider oral glucose.

### **EMT ( Emergency Medical Technician ) with **Medication Endorsement****

If glucose <60 and adult patient: consider GLUCAGON 1mg (IM/IN)

### **PARAMEDIC –**

Seek to determine the possible cause of the assaultive or dangerous behavior and treat those causes as possible. ( i.e. Hypoglycemia, hypoxia, trauma etc. )

Use chemical interventions that would help calm or prevent the co-morbid dangers or restraint.

- **See "Behavioral Emergencies" medications for Agitation/Combativeness**
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# Flathead County Pre-Hospital Protocols

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## BEST PRACTICES CONSIDERATIONS

*“Restraints are a controversial topic in both prehospital and hospital Medicine. Two factors tend to complicate EMS providers’ use of Restraints. First, there is a tendency to confuse police restraint with EMS restraint. Second, safety issues that guide use of restraints in medical facilities are often mistakenly applied to entirely different circumstances faced by prehospital providers”. ( Mike McEvoy, PhD, EMT-Paramedic )*

We recognize a significant difference between “Medical Restraint” and “Behavioral Restraint”. The first dealing with the customary practice of “packaging” a patient to provide safe transport and limit the risk of dislodgement of medical interventions or appliances associated with the treatment of the patient. The second dealing with a means of limiting a patients mobility and ability to do harm to themselves, EMS providers and others associated with or in proximity to the patient. The goal of any “Behavioral Restraint” must always be the least invasive method which accomplishes safe control and the safe delivery of the patient to definitive medical care.

The safety of EMS providers shall always be the highest priority and the first consideration when assessing the safety of the scene and any treatment plan. If when responding to a call EMS personnel find a patient assaultive or overly aggressive, or if they suspect a patient will be assaultive or overly aggressive they should stage and request the assistance of law enforcement personnel. Should the responding law enforcement personnel find the patient of such significant risk as to effect an arrest under MCA 53-21-129 or other statute, then EMS personnel become an “assist” to the officer as needed, but the responsibility of the person in custody then remains with the officer.

The causes of assaultive or dangerous behavior must be considered and addressed to the limits of the ability of the responding EMS personnel. Such issues as hypoxia, hypoglycemia, drugs or alcohol intoxication, stroke or brain trauma/injury may cause behavioral dangers. Psychiatric disorders may also be causative factors in behavioral dangers putting the patient and EMS providers at risk. Persons under restraint, either EMS or Law Enforcement, who struggle against the restraint are at great risk for co-morbid complications. These persons should be carefully monitored for signs of metabolic shift, respiratory compromise and hyperthermia.

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<b><u>Adenosine</u> (Adenocard)</b>	
<b>CLASS</b>	Antidysrhythmic agent
<b>ACTION</b>	Conversion of paroxysmal supraventricular tachycardia to sinus rhythm. Adenosine slows conduction through the AV node and can interrupt reentry pathways.
<b>INDICATIONS</b>	PSVT not responsive to vagal maneuvers
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"> <li>• Second or third-degree AV block, Sick Sinus Syndrome unless patient with a functional artificial pacemaker.</li> <li>• Adenosine is ineffective in converting atrial flutter, atrial fibrillation, or ventricular tachycardia to sinus rhythm, but may slow the rhythm momentarily to aid in arrhythmia diagnosis.</li> <li>• Repeat doses of adenosine are not indicated if the dysrhythmia reoccurs after conversion.</li> </ul>
<b>SIDE EFFECTS</b>	Bradycardia, asystole, ventricular arrhythmias, facial flushing, headache, sweating, palpitations, chest pain. Due to short half-life, adverse effects are generally self-limiting.
<b>ADULT DOSE</b>	6 mg; subsequent dose at 12 mg.
<b>PEDIATRIC DOSE</b>	0.1 mg/kg; subsequent dose at 0.2 mg/kg. For use in SVT only; do not exceed adult dose.
<b>DURATION OF ACTION</b>	Less than 10 seconds
<b>ROUTE</b>	By rapid IV bolus followed by a 12 mg bolus if the first is unsuccessful within 1 to 2 minutes. (To assure solution reaches systemic circulation, administer into IV line as proximal as possible over 1 to 2 seconds followed with rapid saline flush).
<b>FORM</b>	6 mg/2 ml
<b>PHYSICIAN'S ORDER</b>	No



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<b><u>Albuterol</u> (Proventil)</b>	
<b>CLASS</b>	Sympathomimetic/selective for Beta 2 adrenergic receptors
<b>ACTION</b>	Bronchodilator
<b>INDICATIONS</b>	Acute bronchospasm-first dose Anaphylaxis with wheezing-first dose
<b>CONTRAINDICATIONS</b>	Hypersensitivity to this drug
<b>SIDE EFFECTS</b>	Tachycardia, palpitations, anxiousness, headache
<b>ADULT DOSE</b>	2.5 mg in 3 mL NS via nebulizer. Repeat up to three times q 10 minutes.
<b>PEDIATRIC DOSE</b>	2.5 mg in 3 mL NS via nebulizer.  Discontinue medication if the patient becomes tremulous or respiratory status improves.
<b>ROUTE</b>	Inhalation by oxygen nebulizer
<b>FORM</b>	3 mL unit dose
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

## Flathead County Pre-Hospital Protocols

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<b><u>Amiodarone</u> (Cordarone)</b>	
<b>CLASS</b>	Antiarrhythmic
<b>ACTION</b>	Blocks sodium and potassium channels, prolonging ventricular repolarization.
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Tachycardia dysrhythmias</li><li>• V-fib and V-tach</li></ul>
<b>CONTRAINDICATIONS</b>	Patients with known hypersensitivity
<b>SIDE EFFECTS</b>	Hypotension, asystole, PEA, cardiogenic shock, bradycardia and AV block
<b>ADULT DOSE</b>	<ul style="list-style-type: none"><li>• 300 mg IV for V-Fib/Pulseless V-Tach, repeat q 3-5 min at 150 mg.</li><li>• 150 mg IV over 5-10 minutes for tachycardia dysrhythmias</li></ul>
<b>PEDIATRIC DOSE</b>	5 mg/kg IV/IO repeat up to 15 mg/kg or max of 300mg
<b>ROUTE</b>	IVP
<b>FORM</b>	150 mg/3 mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Aspirin</u> (Acetylsalicylic Acid)</b>	
<b>CLASS</b>	Antiplatelet
<b>ACTION</b>	Inhibits platelet aggregation
<b>INDICATIONS</b>	Cardiac chest pain, suspected acute myocardial infarction
<b>CONTRAINDICATIONS</b>	Allergy, Coumadin use, ulcers, bleeding disorders
<b>SIDE EFFECTS</b>	GI bleeding
<b>ADULT DOSE</b>	4 tablets (324 mg)
<b>PEDIATRIC DOSE</b>	NO PEDIATRIC USE PREHOSPITAL
<b>ROUTE</b>	Have patient chew and swallow tablets
<b>FORM</b>	81 mg tablets
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<u>Atropine</u> (ATROPINE SULFATE)	
<b>CLASS</b>	Anticholinergic
<b>ACTION</b>	<ul style="list-style-type: none"> <li>• Cholinergic blocking agent</li> <li>• Increase rate of SA node discharge</li> <li>• Increase conduction through AV node</li> </ul>
<b>INDICATIONS</b>	<ul style="list-style-type: none"> <li>• Hemodynamically significant bradycardia (HR &lt; 60)</li> <li>• Ventricular asystole</li> <li>• Bradycardic PEA</li> <li>• Antidote for organophosphate toxicity</li> </ul>
<b>CONTRAINDICATIONS</b>	Glaucoma
<b>SIDE EFFECTS</b>	Tachycardia, mydriasis, dry mouth, urinary retention, and acute glaucoma
<b>ADULT DOSE</b>	<ul style="list-style-type: none"> <li>• HEMODYNAMICALLY SIGNIFICANT BRADYCARDIA 0.5 mg to 1.0 mg every 3-5 minutes until heart rate of 60 or clinical condition improves or maximum dose of 3.0 mg</li> <li>• CARDIAC ARREST 1 mg IVP every 3-5 minutes. Maximum dose 3.0 mg</li> <li>• ORGANOPHOSPHATE POISONING 2-5 mg every 5 minutes until control of hypersecretion is obtained</li> </ul>
<b>PEDIATRIC DOSE</b>	<ul style="list-style-type: none"> <li>• HEMODYNAMICALLY SIGNIFICANT BRADYCARDIA 0.02 mg/kg IVP every 3-5 minutes not to exceed adult dose. Minimum dose: 0.1 mg. Max single dose of 0.5 mg.</li> </ul>
<b>PRECAUTIONS</b>	Caution should be used when giving this medication to a patient with MI.
<b>ROUTE</b>	IVP, IO or ETT (2 times IV dose)
<b>FORM</b>	1 mg/10 mL
<b>PHYSICIAN'S ORDER</b>	Antidote for organophosphate toxicity only

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

## Flathead County Pre-Hospital Protocols

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<b><u>Atrovent</u> (Ipratropium)</b>	
<b>CLASS</b>	Anticholinergic
<b>ACTION</b>	Bronchodilator
<b>INDICATIONS</b>	Acute bronchospasm with no relief from albuterol
<b>CONTRAINDICATIONS</b>	Known sensitivity to Atrovent or atropine
<b>SIDE EFFECTS</b>	Tachycardia, palpitations, headache, allergic reaction
<b>ADULT DOSE</b>	0.5 mg
<b>PEDIATRIC DOSE</b>	<b>PEDIATRIC USE BY PHYSICIAN ORDER ONLY</b>
<b>ROUTE</b>	Inhalation by oxygen nebulizer
<b>FORM</b>	0.5 mg/1.25 mL unit dose
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

## Flathead County Pre-Hospital Protocols

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<b><u>Benadryl</u></b> <b>(Diphenhydramine)</b>	
<b>CLASS</b>	Antihistamine
<b>ACTION</b>	<ul style="list-style-type: none"><li>• Blocks histamine receptors</li><li>• Has some sedative effects</li><li>• Anticholinergic for EPS</li></ul>
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Hives or angiodema</li><li>• Anaphylaxis</li><li>• Extrapyrasidal Syndrome</li></ul>
<b>CONTRAINDICATIONS</b>	Asthma, hypersensitivity, pregnant or lactating females
<b>SIDE EFFECTS</b>	Sedation, palpitations, hypotension, headache, thickens bronchial secretions, blurred vision
<b>ADULT DOSE</b>	25-50 mg IVP or 50 mg IM
<b>PEDIATRIC DOSE</b>	1 mg/kg; not to exceed adult dose
<b>ROUTE</b>	IV or deep IM
<b>FORM</b>	50 mg/1 mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

## Flathead County Pre-Hospital Protocols

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<b><u>Benadryl (tablets)</u> (Diphenhydramine)</b>	
<b>CLASS</b>	Antihistamine
<b>ACTION</b>	<ul style="list-style-type: none"><li>• Blocks histamine receptors</li><li>• Has some sedative effects</li></ul>
<b>INDICATIONS</b>	Hives or angiodema
<b>CONTRAINDICATIONS</b>	Asthma, hypersensitivity, pregnant or lactating females
<b>SIDE EFFECTS</b>	Sedation, palpitations, hypotension, headache, thickens bronchial secretions, blurred vision
<b>ADULT DOSE</b>	50-100 mg PO
<b>PEDIATRIC DOSE</b>	0.5 -1 mg/kg; not to exceed adult dose
<b>ROUTE</b>	Oral
<b>FORM</b>	25 mg tablets
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Calcium Chloride</u></b>	
<b>CLASS</b>	Electrolyte
<b>ACTION</b>	<ul style="list-style-type: none"><li>• Increase cardiac contractility</li><li>• Decreases vasodilation due to calcium channel blocker overdose</li><li>• Stabilize cardiac muscle cells in patients with hyperkalemia</li></ul>
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Calcium channel blocker toxicity</li><li>• Hyperkalemia</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• V-fib, digitalis toxicity, hypercalcemia.</li><li>• Precipitates with Bicarb</li></ul>
<b>SIDE EFFECTS</b>	<ul style="list-style-type: none"><li>• Bradycardia, asystole, hypotension, V-fib, coronary and cerebral artery spasm, nausea and vomiting.</li><li>• Extravasation causes necrosis.</li></ul>
<b>ADULT DOSE</b>	8-16 mg/kg (usually 5-10ml) IV for hyperkalemia and calcium channel OD. May repeat as needed.  2-4 mg/kg (usually 2ml) IV for prophylaxis before IV calcium channel blockers
<b>PEDIATRIC DOSE</b>	5-7 mg/kg; not to exceed adult dose
<b>ROUTE</b>	IV, IO
<b>FORM</b>	100 mg/mL (10% solution)
<b>PHYSICIAN'S ORDER</b>	Hyperkalemia only

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes



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<b><u>Dextrose 50%</u></b>	
<b>CLASS</b>	Carbohydrate
<b>ACTION</b>	Quick infusion of sugar into blood for metabolism
<b>INDICATIONS</b>	Hypoglycemia
<b>CONTRAINDICATIONS</b>	Intracerebral bleeding, hemorrhagic CVA
<b>SIDE EFFECTS</b>	Tissue necrosis if extravasations occur
<b>ADULT DOSE</b>	25 Gm IV into secure vein. Give slowly.
<b>PEDIATRIC DOSE</b>	2 mL/kg of D25 IV slowly into secure vein.  ❖ To make D25, expel ½ (25 mL) of D50 ampule and replace with 25 mL of NS.
<b>ROUTE</b>	IV, IO, PO
<b>FORM</b>	25 Gm/50 mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Diazepam</u> (Valium)</b>	
<b>CLASS</b>	Anti-anxiety/anticonvulsant
<b>ACTION</b>	CNS depressant
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Status epilepticus</li><li>• Moderate to severe pain</li></ul>
<b>CONTRAINDICATIONS</b>	Hypersensitivity to the drug, hypotension
<b>SIDE EFFECTS</b>	Drowsiness, slurred speech, transient hypotension, blurred vision, nausea and vomiting, respiratory depression
<b>ADULT DOSE</b>	2-5 mg IV or 5-10 mg IM, repeat to total of 10 mg
<b>PEDIATRIC DOSE</b>	0.3 mg/kg IV/IM (0.5 mg/kg rectally); not to exceed adult dose.
<b>ROUTE</b>	IV, IM, rectal (IM absorption variable, this route not preferred, is used as last resort)
<b>FORM</b>	10 mg/2 mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Diltiazem</u> (Cardizem)</b>	
<b>CLASS</b>	Calcium channel blocker
<b>ACTION</b>	Calcium antagonist
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Atrial Fibrillation</li><li>• Atrial Flutter</li><li>• PSVT refractory to adenosine</li></ul>
<b>CONTRAINDICATIONS</b>	Hypotension, heart block
<b>SIDE EFFECTS</b>	Chest pain, congestive heart failure, syncope, ventricular dysrhythmia
<b>ADULT DOSE</b>	0.25 mg/kg IV bolus over 2 min, may repeat in 15 min with 0.35 mg/kg if response is inadequate (usual adult dose 10-20 mg ---consider lower dose in elderly patients) Max dose 20mg IVP
<b>PEDIATRIC DOSE</b>	<b>NOT FOR USE IN PEDIATRICS</b>
<b>ROUTE</b>	<b>IV</b>
<b>FORM</b>	25 mg/5 mL
<b>PHYSICIAN'S ORDER</b>	Yes

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Dopamine Hydrochloride</u></b> <b>(Intropin)</b>	
<b>CLASS</b>	Sympathomimetic
<b>ACTION</b>	Positive inotrope
<b>INDICATIONS</b>	Cardiogenic shock
<b>CONTRAINDICATIONS</b>	Hypovolemic shock
<b>SIDE EFFECTS</b>	Ventricular tachycardia, ectopic beats, nausea and vomiting, dyspnea, hypertension, hypotension
<b>ADULT DOSE</b>	2-20 mcg/kg/min -- titrate for effect starting at 5-10 mcg/kg
<b>PEDIATRIC DOSE</b>	2-20 mcg/kg/min
<b>ROUTE</b>	IV or IO
<b>FORM</b>	400 mg/5 mL (400 mg/250 mL pre-mix bag)
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Epinephrine</u> (auto-injector)</b>	
<b>CLASS</b>	Sympathomimetic
<b>ACTION</b>	<ul style="list-style-type: none"><li>• Bronchodilation</li><li>• Positive chronotrope</li><li>• Positive inotrope</li></ul>
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Angioedema and/or stridor</li><li>• Anaphylaxis</li></ul>
<b>CONTRAINDICATIONS</b>	(Relative) cardiovascular disease, angina, hypertension, pregnancy, hyperthyroidism
<b>SIDE EFFECTS</b>	Palpitations, tachycardia, arrhythmia, hypertension, headache, anxiousness
<b>ADULT DOSE</b>	Pre-loaded 0.3 mg ampule of epinephrine
<b>PEDIATRIC DOSE</b>	Pre-loaded 0.15 mg ampule of epinephrine
<b>ROUTE</b>	Inserted perpendicular (90 degree angle) to the mid thigh and held for 10 seconds while the entire dose is given
<b>FORM</b>	Pre-loaded 0.3 mg ampule of epinephrine
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Epinephrine (1:1,000)</u></b>	
<b>CLASS</b>	Sympathomimetic
<b>ACTION</b>	<ul style="list-style-type: none"><li>• Bronchodilation</li><li>• Positive chronotrope</li><li>• Positive inotrope</li></ul>
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Angioedema and/or stridor</li><li>• Anaphylaxis</li><li>• Acute asthma</li></ul>
<b>CONTRAINDICATIONS</b>	(Relative) cardiovascular disease, angina, hypertension, pregnancy, hyperthyroidism
<b>SIDE EFFECTS</b>	Palpitations, tachycardia, arrhythmia, hypertension, headache, anxiousness
<b>ADULT DOSE</b>	0.3 to 0.5 mg IM every 5-15 minutes as required
<b>PEDIATRIC DOSE</b>	0.01 mg/kg IM to maximum single dose of 0.5 mg
<b>ROUTE</b>	IM
<b>FORM</b>	1 mg/mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Epinephrine (1:10,000)</u></b>	
<b>CLASS</b>	Sympathomimetic
<b>ACTION</b>	<ul style="list-style-type: none"><li>• Positive chronotrope</li><li>• Positive inotrope</li><li>• Bronchodilator</li></ul>
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Ventricular fibrillation</li><li>• Asystole</li><li>• Pulseless electrical activity (PEA)</li><li>• Anaphylaxis (severe bronchospasm, BP &lt;80 mmHg)</li></ul>
<b>CONTRAINDICATIONS</b>	None
<b>SIDE EFFECTS</b>	Palpitations, tachycardia, arrhythmia, hypertension, headache, anxiousness
<b>ADULT DOSE</b>	<ul style="list-style-type: none"><li>• 0.1-2 mg every 3-5 minutes IV until the desired effect is achieved</li><li>• Severe anaphylaxis dose: 1-4 mcg/min IV</li></ul>
<b>PEDIATRIC DOSE</b>	Refer to PALS
<b>ROUTE</b>	IV, IO or ETT (2 times IV dose)
<b>FORM</b>	1 mg/10 mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Fentanyl</u></b>	
<b>CLASS</b>	Opiate agonist
<b>ACTION</b>	Binds to the opiate receptor to block pain response
<b>INDICATIONS</b>	Moderate to severe pain
<b>CONTRAINDICATIONS</b>	MAOI use, asthma, Myasthenia Gravis
<b>SIDE EFFECTS</b>	Hypotension, decrease LOC, nausea, bradycardia, Chest wall rigidity in pediatric patients
<b>ADULT DOSE</b>	25 to 100 mcg IVP or IM to max of 150 mcg
<b>PEDIATRIC DOSE</b>	May give one dose of 1-2 mcg/kg IVP or IM
<b>ROUTE</b>	IV, IO, IM
<b>FORM</b>	50 mcg/mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes



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<b><u>Furosemide</u></b> <b>(Lasix)</b>	
<b>CLASS</b>	Loop diuretic
<b>ACTION</b>	Inhibits sodium and chloride re-absorption in the kidneys, causes venous dilation and reduces preload
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Congestive heart failure</li><li>• Pulmonary edema</li></ul>
<b>CONTRAINDICATIONS</b>	Hypersensitivity to furosemide
<b>SIDE EFFECTS</b>	Hypotension, hypovolemia, hypokalemia
<b>ADULT DOSE</b>	40 mg slow IVP
<b>PEDIATRIC DOSE</b>	per physician order
<b>ROUTE</b>	IV
<b>FORM</b>	10 mg/1 mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Glucagon</u></b>	
<b>CLASS</b>	Insulin antagonist
<b>ACTION</b>	Increases the breakdown of glycogen into glucose
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• For hypoglycemic patients in whom IV access cannot be achieved</li><li>• In any suspected hypoglycemic patient who is combative</li><li>• Beta blocker OD</li></ul>
<b>CONTRAINDICATIONS</b>	None
<b>SIDE EFFECTS</b>	May cause allergic reaction in rare instances
<b>ADULT DOSE</b>	1 mg vial reconstituted with 1 ml dilute (age 12 and up) 2mg IV for beta blocker OD
<b>PEDIATRIC DOSE</b>	0.5 mg, up to age 12, IM in the thigh
<b>ROUTE</b>	IM, IN
<b>FORM</b>	1 mg/1 mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Haldol</u> (Haloperidol)</b>	
<b>CLASS</b>	Antipsychotic/sedative
<b>ACTION</b>	Blocks dopamine receptors
<b>INDICATIONS</b>	Sedate psychotic, combative patients
<b>CONTRAINDICATIONS</b>	CNS depression, pregnancy, hyperthermia, prolonged QT interval
<b>SIDE EFFECTS</b>	Hypotension, extrapyramidal reactions, prolonged QT
<b>ADULT DOSE</b>	5 mg IV or 5-10 mg IM
<b>PEDIATRIC DOSE</b>	No indication for pediatric use
<b>ROUTE</b>	IV, IM
<b>FORM</b>	5 mg/1mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

# Flathead County Pre-Hospital Protocols

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Ketamine	
<b>CLASS</b>	Anesthetic - Analgesic
<b>ACTION</b>	Analgesic- reduce feeling or perception of pain without loss of sensation
<b>INDICATIONS</b>	<ul style="list-style-type: none"> <li>• Pain</li> <li>• Pain control in hypotensive pt. &lt;100 Systolic</li> </ul>
<b>CONTRAINDICATIONS</b>	Known Hypersensitivity –hypertensive crisis, amphetamine abuse, acute pulmonary edema -< 5 years of age
<b>SIDE EFFECTS</b>	<p>Laryngospasm- can be managed with bagging</p> <p>Hypersalivation- usually not a problem, can be managed with ATROPINE 0.5mg IV</p> <p>Muscle Hypertonia- rarely an issue, can use benzodiazepine if necessary</p> <p>Cardiac Arrhythmia- tachycardia (catecholamine release), rarely bradycardia</p>
<b>ADULT DOSE</b>	0.1-0.25mg/kg IV to a max of .5mg/kg (only approved EMS dosing)
<b>PEDIATRIC DOSE</b>	None approved for < 5 years of age
<b>ROUTE</b>	IV
<b>FORM</b>	200 mg/20 mL Multi Dose Vial
<b>PHYSICIAN'S ORDER</b>	Needed for second dose

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<u>Lidocaine</u>	(Xylocaine)
<b>CLASS</b>	Antiarrhythmic
<b>ACTION</b>	<ul style="list-style-type: none"> <li>• Suppresses ventricular ectopy by suppressing automaticity in the His-purkinje system</li> <li>• Increases ventricular fibrillation threshold</li> </ul>
<b>INDICATIONS</b>	<ul style="list-style-type: none"> <li>• Stable ventricular tachycardia</li> <li>• Ventricular fibrillation and pulseless VT</li> </ul>
<b>CONTRAINDICATIONS</b>	Hypersensitivity to lidocaine
<b>SIDE EFFECTS</b>	Seizures, respiratory depression, dizziness, restlessness, confusion, blurred vision, numbness, hypotension, bradycardia, heart block, nausea and vomiting
<b>ADULT DOSE</b>	1.0-1.5 mg/kg repeat in 3-5 minutes to a total of 3 mg/kg
<b>PEDIATRIC DOSE</b>	1 mg/kg IVP slowly. Total dose is 3 mg/kg
<b>ROUTE</b>	IV, IO, or ETT
<b>FORM</b>	100 mg/5 mL
<b>PHYSICIAN'S ORDER</b>	<p>No</p> <p><b>PRECAUTIONS:</b> Administer ½ the dose in patients over 70, in CHF, or with liver disease</p>

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Magnesium Sulfate</u></b>	
<b>CLASS</b>	Electrolyte
<b>ACTION</b>	Acts as a calcium channel blocker and as a smooth and skeletal muscle relaxant as well as a CNS depressant
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Torsades des Pointes, refractory VF/VT</li><li>• Eclamptic seizures</li></ul>
<b>CONTRAINDICATIONS</b>	Renal disease, heart block
<b>SIDE EFFECTS</b>	Respiratory, CNS depression, hypotension, cardiac arrest
<b>ADULT DOSE</b>	1-2 Gm IV over 1-2 minutes  For eclamptic seizures, mix 4 Gm IV over 5 minutes
<b>PEDIATRIC DOSE</b>	<b>NOT FOR USE IN PEDIATRICS</b>
<b>ROUTE</b>	IV
<b>FORM</b>	500 mg/mL
<b>PHYSICIAN'S ORDER</b>	Eclamptic seizures

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Morphine Sulfate</u> (Astramorph)</b>	
<b>CLASS</b>	Narcotic
<b>ACTION</b>	CNS depressant
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Severe pain</li><li>• Pulmonary edema and CHF</li><li>• Chest pain, suspected AMI</li></ul>
<b>CONTRAINDICATIONS</b>	Hypersensitivity to opiates, head injuries, chest or abdominal injury
<b>SIDE EFFECTS</b>	Respiratory depression, nausea, vomiting, bradycardia, hypotension, altered level of consciousness
<b>ADULT DOSE</b>	2-5 mg IV to total of 15 mg as long as vitals are stable
<b>PEDIATRIC DOSE</b>	0.1-0.2 mg/kg, not to exceed adult dose
<b>ROUTE</b>	IV, IO, IM, SQ
<b>FORM</b>	10 mg/mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Narcan</u> (Naloxone Hydrochloride)</b>	
<b>CLASS</b>	Narcotic antagonist
<b>ACTION</b>	Reverses effects of narcotics
<b>INDICATIONS</b>	Suspected narcotic use
<b>CONTRAINDICATIONS</b>	Patients with a history of hypersensitivity to the drug
<b>SIDE EFFECTS</b>	Rapid administration causes projectile vomiting, pt may quickly awaken agitated and combative.
<b>ADULT DOSE</b>	0.4-4 mg slow IV push, titrated to effect  up to 10 mg total
<b>PEDIATRIC DOSE</b>	0.1 mg/kg up to 20kg, not to exceed adult dose
<b>ROUTE</b>	IV, IM, IO, IN, SC, or ETT
<b>FORM</b>	2 mg/2 mL
<b>PHYSICIAN'S ORDER</b>	No  <b>PRECAUTIONS:</b> Restrain patient prior to administering

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes



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<b><u>Nitroglycerin</u> (Nitrostat)</b>	
<b>CLASS</b>	Anti-anginal
<b>ACTION</b>	<ul style="list-style-type: none"><li>• Dilates coronary arteries</li><li>• Dilates systemic arteries</li></ul>
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Angina</li><li>• Suspected myocardial infarction</li><li>• Acute pulmonary edema</li></ul>
<b>CONTRAINDICATIONS</b>	Hypotension, cerebral bleeding, Pt taking Viagra, Cialis or Levitra.
<b>SIDE EFFECTS</b>	Headache, hypotension, syncope, tachycardia, flushing
<b>ADULT DOSE</b>	0.4 mg tablet or spray every 3-5 minutes until relief of discomfort, or total of 3 doses. 3 concurrent doses or (q1min x3) for pulmonary edema, then q 3-5min, no limit as long as BP>100
<b>PEDIATRIC DOSE</b>	<b>Not recommended for pediatric use.</b>
<b>ROUTE</b>	SL
<b>FORM</b>	0.4 mg tablets or nitrolingual aerosol spray
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Oral Glucose</u></b>	
<b>CLASS</b>	Carbohydrate
<b>ACTION</b>	Infusion of sugar in the digestive system to be metabolized into the blood
<b>INDICATIONS</b>	Blood sugar <60 mg/dL
<b>CONTRAINDICATIONS</b>	Decrease level of consciousness, unconsciousness, possible CVA or TIA
<b>SIDE EFFECTS</b>	None
<b>ADULT DOSE</b>	Entire contents of tube
<b>PEDIATRIC DOSE</b>	Entire contents of tube
<b>ROUTE</b>	PO
<b>FORM</b>	24 Gm
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Oxytocin</u> (Pitocin)</b>	
<b>CLASS</b>	Hormone
<b>ACTION</b>	Causes contraction of uterine smooth muscle
<b>INDICATIONS</b>	Postpartum hemorrhage
<b>CONTRAINDICATIONS</b>	Rule out multiple births before administration, only after delivery of the placenta.
<b>SIDE EFFECTS</b>	Hypertension, dysrhythmias, seizures
<b>ADULT DOSE</b>	20 units in 1000 cc NS to infuse at wide open for first liter or 10 units IM
<b>PEDIATRIC DOSE</b>	Not for Pediatric Use
<b>ROUTE</b>	IV or IM
<b>FORM</b>	10 units/mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Phenergan</u> (Promethazine HCL)</b>	
<b>CLASS</b>	Phenothiazine
<b>ACTION</b>	Antiemetic, potentiates narcotics
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Control of nausea and recurrent vomiting</li><li>• Adjunct for analgesia</li></ul>
<b>CONTRAINDICATIONS</b>	<ul style="list-style-type: none"><li>• Patients with a known hypersensitivity to phenothiazines</li><li>• Patients who are allergic to sulfites</li><li>• Altered level of consciousness</li></ul>
<b>SIDE EFFECTS</b>	Extrapyramidal reactions, excessive sedation
<b>ADULT DOSE</b>	12.5 mg IVP over one minute or 25 mg IM
<b>PEDIATRIC DOSE</b>	Not to be given to anyone under 16
<b>ROUTE</b>	IV or IM
<b>FORM</b>	25 mg/1 mL
<b>PHYSICIAN'S ORDER</b>	No  <b>SPECIAL NOTE:</b> Subcutaneous injection or extravasations may result in tissue necrosis

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Sodium Bicarbonate</u></b>	
<b>CLASS</b>	Alkalinizing agent
<b>ACTION</b>	Increases blood pH  Combines with H <sup>+</sup> ions to form a weak volatile acid, resulting in the generation of CO <sub>2</sub> and water
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Cardiac arrest</li><li>• Tricyclic anti-depressant overdose</li><li>• Hyperkalemia</li></ul>
<b>CONTRAINDICATIONS</b>	Alkalotic states, respiratory acidosis
<b>SIDE EFFECTS</b>	Rare
<b>ADULT DOSE</b>	1 mEq/kg initially, then ½ the initial dose
<b>PEDIATRIC DOSE</b>	1 mEq/kg initially, then ½ the initial dose
<b>ROUTE</b>	IV or IO
<b>FORM</b>	50 mEq/50 mL (8.4% solution)
<b>PHYSICIAN'S ORDER</b>	For Hyperkalemia  Tricyclic anti-depressant overdose

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<b><u>Thiamine</u></b> <b>(Betaxin)</b>	
<b>CLASS</b>	Vitamin B1
<b>ACTION</b>	Allows normal metabolism of glucose
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Coma of unknown origin</li><li>• Delirium tremors</li><li>• Hypoglycemia</li></ul>
<b>CONTRAINDICATIONS</b>	None
<b>SIDE EFFECTS</b>	Rare, if any
<b>ADULT DOSE</b>	100 mg
<b>PEDIATRIC DOSE</b>	<b>Not recommended for use in children</b>
<b>ROUTE</b>	IV, IM when IV route is not available
<b>FORM</b>	100 mg/1 mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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<u>TXA</u>	<b>Tranexamic Acid</b>
<b>CLASS</b>	Antifibrinolytic
<b>ACTION</b>	Inhibits the activation of plasminogen to plasmin
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• Excessive Blood Loss due to Trauma</li><li>• Hemorrhagic shock from trauma, with <b>either</b> systolic BP &lt;90 mmHg <b>or</b> pulse rate greater than 110 per min.</li><li>• Traumatic Brain Injury</li></ul>
<b>CONTRAINDICATIONS</b>	Known Hypersensitivity  >3 hours since injury
<b>SIDE EFFECTS</b>	
<b>ADULT DOSE</b>	1 gram in 50 cc of normal saline, given over 10 minutes
<b>PEDIATRIC DOSE</b>	
<b>ROUTE</b>	IV
<b>FORM</b>	
<b>PHYSICIAN'S ORDER</b>	No

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<b><u>Versed</u></b> <b>(Midazolam HCL)</b>	
<b>CLASS</b>	Sedative
<b>ACTION</b>	Binds to benzodiazepine receptors
<b>INDICATIONS</b>	<ul style="list-style-type: none"><li>• To facilitate intubation</li><li>• Seizures</li><li>• Sedation for Cardioversion and Pacing</li><li>• Adjunct for relief of Severe pain, muscle spasm</li></ul>
<b>CONTRAINDICATIONS</b>	Acute glaucoma, shock
<b>SIDE EFFECTS</b>	Respiratory depression, hypotension, decreased heart rate
<b>ADULT DOSE</b>	1-5 mg IV to a total of 5 mg or 5 mg IM/IN
<b>PEDIATRIC DOSE</b>	0.1 mg/kg IV, IM, IO slowly
<b>ROUTE</b>	IV, IO, IM, IN
<b>FORM</b>	5 mg/5mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes



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<b><u>Zofran</u></b> <b>(Ondansetron)</b>	
<b>CLASS</b>	Antiemetic
<b>ACTION</b>	Serotonin Receptor Antagonist
<b>INDICATIONS</b>	• Nausea and Vomiting
<b>CONTRAINDICATIONS</b>	Known Hypersensitivity
<b>SIDE EFFECTS</b>	Diarrhea, Headache Rare: hypotension
<b>ADULT DOSE</b>	4mg IV or 8mg IV (ODT)
<b>PEDIATRIC DOSE</b>	0.1 mg/kg IV up to age 12, 40kg, >40kg=4mg
<b>ROUTE</b>	IV or PO
<b>FORM</b>	4 mg/2mL
<b>PHYSICIAN'S ORDER</b>	No

Note: Drug cards are available for information. Refer to specific protocols for Dose and Routes

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## **NOTES**

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